



Advantages and Disadvantages, Indications and Contra- Indications of Porcelain Inlays.*

By JOHN Q. BYRAM, D.D.S.

Before studying the methods of constructing porcelain inlays, let us consider their advantages and disadvantages, their indications and contra-indications.

The advantages of porcelain as a filling material are:

1. Fillings can be inserted which more nearly harmonize with the natural teeth.
2. Porcelain is a poor conductor of thermal and a non-conductor of electrical changes.
3. The margins of cavities properly filled with porcelain, are not readily attacked by caries.
4. The cement used as a retaining medium causes the filling to have the greatest adhesion of any of the filling materials except cement.
5. The patient is relieved of sitting with the rubber dam adjusted over the mouth for periods of considerable length, and of the pain incident to adjusting the rubber dam and cervical clamps for cavities extending beneath the gum.
6. The nervous strain of both patient and dentist is lessened, thereby relieving the patient of the shock which usually follows long, tedious operations.

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ITEMS OF INTEREST

7. Busy patients need not spend so much time in the dental chair. After the cavity is prepared the matrix may be burnished to the cavity, or an impression of the cavity may be taken, and then the patient dismissed until the inlay is completed.

8. Faulty fillings are easily dislodged. While porcelain has the advantage over gold in making a filling that more nearly harmonizes with the natural teeth, and one that is a non-conductor of thermal and electrical changes, it has still another advantage, which should appeal to all conscientious operators, in that imperfect fillings made of this material are easily dislodged. A large number of faulty gold fillings, which do not preserve the teeth, are retained by deep grooves, so that it is almost impossible to dislodge them; such fillings deceive the patient, and many times even the dentist. If a porcelain filling is faulty, it is displaced, and the patient knows immediately that the services of a dentist are required.

The disadvantages of porcelain as a filling material are:

Disadvantages of Porcelain.

1. The friability of porcelain causes it to fracture readily, thereby excluding it from any form of cavity that can not be so prepared that frail margins of the filling material can be avoided or else protected from stress.

2. It is impossible to bevel the cavity margins to protect the enamel. The relative strength of the porcelain and the enamel are approximately the same so that one can not protect the other.

3. It is difficult to match the color of the natural teeth. This always has been and always will be one of the most serious disadvantages of porcelain as a filling material. And until we understand more thoroughly the general phenomena of color formation, we may expect to be disappointed with many of our inlays.

4. The cement used as a retaining material may cause a change in the color of the tooth or of the inlay. This, however, may be largely overcome by the application of correct principles in cavity preparation.

5. The cement will dissolve unless there is only a thin film used as the retaining medium. This is not so much a disadvantage to the skillful, painstaking operator; for, if the margins are defective, he will remove the defect by making a new inlay. But to the incompetent or careless operator, this will always be a disadvantage, because any cement now produced will dissolve from the margins of an ill-fitting inlay.

Porcelain is not applicable to all forms of fillings, and it will never entirely displace gold or amalgam as filling materials. It has taken its place, however, along with these materials, and, when

Applicability of Porcelain.

properly applied and judiciously used where indicated, porcelain should

even take first rank as a filling material. Its indications as a filling material may be classified, first, as general, and second, as local. The following will be considered under the first classification:

1. For those patients who really have an appreciation of the esthetic quality of dental operations, and who object to the conspicuousness of metallic fillings. Many patients fancy that they appreciate this quality, but they measure their appreciation rather by the cost and permanency of the work than by an esthetic standard.
2. For those patients whose physical condition is such that the insertion of a large gold filling would give rise to a nervous shock. We should consider the effect of such shock on the system and endeavor to avoid subjecting our patients to long, tedious and painful operations.
3. For those patients whose pericementum and alveolar process are diseased, a condition which almost excludes any material that requires considerable condensation.
4. For those patients who are suffering from caries that has progressed to such an extent that the pulp is almost involved, and in whose teeth the pulp would die, if filled with gold, because of the irritation caused by thermal changes.

The indications under the second classification are:

1. All cavities on the labial and very many on the buccal surfaces of teeth.
2. Some simple approximal cavities on incisors and cuspids.
3. Approximo-incisal cavities, if these cavities can be prepared in such a manner that the retentive resistance will be greater than the stress.
4. Cavities involving the incisal edge.
5. Approximo-occlusal cavities on bicuspid and molars in which the cavities are so prepared that a large enough mass of porcelain may be used to withstand the stress applied, and in which the frail margins will not be exposed to the stress of mastication, or in which the cavity extends far beneath the gingival margin.
6. Deep cavities on the occlusal surface of lower molars.
7. Cavities involving the entire occlusal surface of pulpless molars.

The choice of porcelain is contra-indicated in

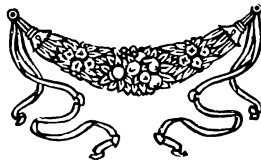
Contra-Indications. the following conditions:

1. In those cavities from which the stress will dislodge the filling or cause it to fracture.
2. In those simple approximal cavities on incisors and cuspids in which a gold filling is scarcely noticeable.
3. In disto-occlusal cavities of upper bicuspid and molars.
4. In all occlusal cavities on upper molars and those occlusal cavities on lower molars in which severe usage in the process of mastication might cause the margins of the inlay to fracture.

ITEMS OF INTEREST

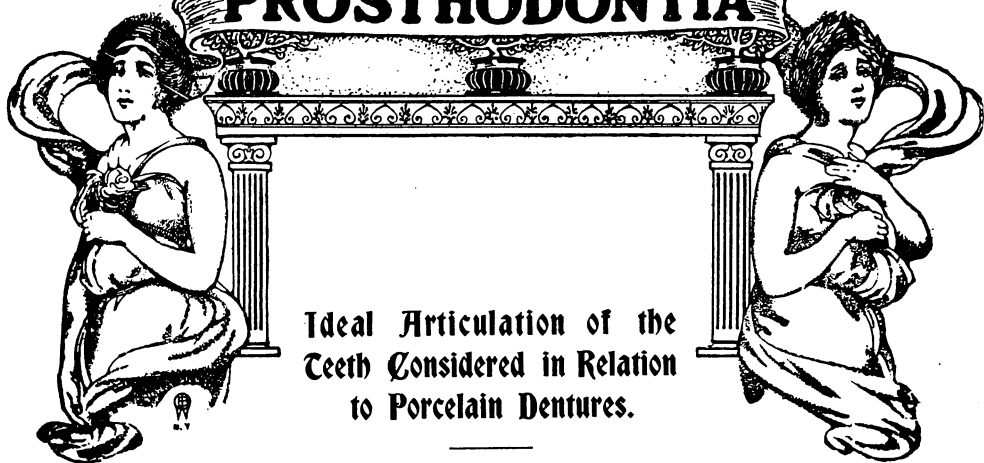
While porcelain may be used as a material for filling many cavities in bicuspid and molars with a fair degree of success, it has nevertheless been demonstrated that it is not the safest material to use for filling most of the cavities in these teeth. It should be chosen, therefore, only where the requirements demand it for filling cavities in bicuspid and molars. The dentist who limits his practice to filling cavities in incisors and cuspids with porcelain will probably render his patients better service than the one who promiscuously inserts inlays in all classes of cavities regardless of their indications and contra-indications.

Generally speaking, as the size of the cavities in *vital* incisors and cuspids increases does the indication for porcelain inlays also increase, for if a small gold filling at the gingival margin of an incisor or a cuspid is conspicuous, such a filling in an approximo-incisal cavity is much more noticeable. While there is a limit to the size of a porcelain inlay that may be inserted in an approximo-incisal cavity successfully, there are, nevertheless, too many crowns adjusted upon incisors and cuspids. The comparative ease with which a crown may be adjusted upon these teeth induces many operators to overlook the good qualities of porcelain as a filling material for many large cavities. On the other hand, the decision as to whether an inlay shall be inserted into a particular cavity should be dependent upon the degree of the operator's skill. The prudent operator will not attempt to insert large approximo-incisal inlays, for example, until he has become thoroughly familiar with the methods of cavity preparation and is a master, in a very large degree, of the technique of inlay construction; for the construction of porcelain inlays involves a series of mechanical principles, which must be observed with precision. Failure to apply these principles will cause imperfect fillings. The best work can be accomplished only when the operator possesses a through knowledge of the principles of inlay construction, of the properties of porcelain, a mastery of inlay technique, and when the eye is trained to detect the delicate hues of colors.





PROSTHODONTIA



Ideal Articulation of the Teeth Considered in Relation to Porcelain Dentures.

By DR. STEWART J. SPENCE, Chattanooga, Tenn.

Although nature rarely produces a denture fully in accord with her ideals, yet such ideals exist, and they ought always to be imitated by art, so far as circumstances permit. Instead of the imperfectly shaped and illy articulated teeth which prosthetic dentistry customarily doles out to the public, every plate or bridge that leaves the dental office ought to be perfect according to nature's ideals.

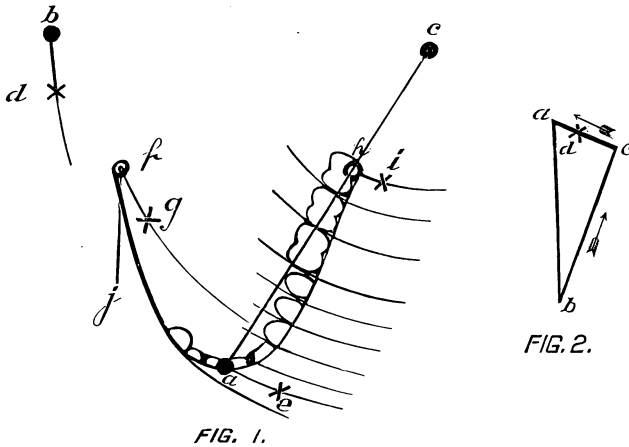
The porcelain incisors and cuspids of commerce are excellent as regards shape, being only not enough flattened at the approximal surfaces, but at the bicuspid the divergence from nature's patterns begins to be marked; and this divergence increases as we proceed posteriorly, until at the position of the third molar there is only a blank. Ordinarily porcelain bicuspid are much too narrow bucco-lingually and their cusps too short and blunt; the second molar is made narrower than the first, instead of wider—bucco-lingually; and the occlusal groove in both bicuspid and molars is not always equidistant throughout its length from the buccal cusps. Yet with all these defects vastly better dentures might be made than—at least, many worn to-day. Many of these are such parodies on nature's beautiful works that they would be comical were they not a profound disgrace to our profession.

The writer's purpose in this paper is to formulate a few rules for the arrangement and articulation of porcelain teeth, the observance of which would, he believes, revolutionize prosthetic dentistry in this particular.

ITEMS OF INTEREST

But before proceeding to these rules, let us study the various bites. These are three—the vertical bite when used for crushing, the vertical bite when used for incising and the lateral or grinding bite.

The vertical bite, when used alone for mastication, is abnormal. The old time theory that food should be distributed in about equal quantities on each side of the mouth and be crushed by vertical closures ought never to be whispered in our days, unless, perhaps, in connection with



the very aged or those who have lost all lower ridge. Even with the latter of these, long-cusped rather than cuspless teeth ought to be used, because they aid vastly—even with only the vertical bite—in tearing and grinding food; and correctly occluding cusps do not tend to dislodge plates.

The two normal bites are the incising and the lateral. The incising bite is that wherein the lower jaw is protruded until the lower incisors occlude edge to edge with the upper and then glide down them with a shearing action, both condyles moving forward in their sockets. The lateral bite is that in which only one condyle moves forward, the other merely rotating, the entire denture being swung sideward and slightly forward, performing the bite in its return movement.

As we shall have much to consider concerning
The Lateral Bite. this lateral bite, let us obtain a clear conception of it.

Fig. 1 will help to this. Here *a b c* mark the three points of the lower jaw—the two condyles *b* and *c*, and the incisor point *a*. In nature this is usually an equilateral triangle, each side measuring

PROSTHODONTIA

about four inches. (The figure is drawn half size.) In making the lateral bite the condyle *b* moves forward, traversing the arc of a circle having *c* for its center. Thus the entire denture is, in differing degrees, carried forward at the time that it is carried sideward. Therefore when the condyle *b* moves out to the mark *d*, the incisor point at *a* will move out to the mark *e* (these movements, being in the same circle, measure the same), and the last buccal cusp on the right side (*f*) will move out to the mark *g*, while the last buccal cusp on the left side (*h*) will be carried to the mark *i*, each traveling in the same time distances differing in proportion to their distances from *c*, the center. For instance, as *f* is twice as far from *c* as is *h*, therefore the distance from *f* to *g* is twice that from *h* to *i*.

The other teeth move proportionately with those above mentioned; those on the left side travel along the slightly diverging, because widening, arcs lying between *h* and *a*, *c* being the center.

Let us now get a clear comprehension of how this lateral bite is made. This is not done by moving the teeth over one another to and fro laterally. It occurs only during the inward, never during the outward, movement of the jaw. It commences by the descent of the jaw, in order to make room for the food to be inserted between the teeth; this insertion is accomplished by the active action of the tongue and the passive pressure of the cheek. It is rarely that any food remains on the other side of the mouth (which in this article we will call the *right* side, supposing, for convenience of description, the lateral bite to be always made on the *left* side), because there the teeth do not occlude in a manner well adapted for mastication; still it is not impossible to eat with food on both sides. In opening, the jaw descends vertically, as shown in Fig. 2 by the line *a b*; for the lateral motion outward is all made during its ascent, from *b* to *c*; from whence it proceeds inward from *c* to *a* in an almost horizontal direction, performing mastication only during this latter part of its journey.

Just how far the jaw is ordinarily swung laterally in eating is hard to calculate, but probably this is not more than half the possible distance, or a little more than the width of a lower incisor.

The inclination of this line *c a* is governed by the steepness of the cusps. When the point *a* of Fig. 1 is at *c* of Fig. 2 then the point *f* of Fig. 1 is at *g* of the same figure, and is (if the correct denture) in occlusion with the palatal cusp of the upper molar located at *g*, from whence it glides down to *f* as the bite proceeds from *c* to *a* of Fig. 2. Thus while mastication is being performed on the left side there is occlusion on the right side, and as there is also occlusion of the condyle with its socket at the same time, it follows that the inclination of the path of the condyle

is the same as that of the cusps, for if otherwise, contact of one or other would be prevented. The inclination of $a c$ (Fig. 2), therefore, is that of the lateral bite, of the cusps, and of the temporo-maxillary articulation. (This is said only of normal conditions. As the cusps become worn, and especially as some teeth become lost, the path of the condyle probably changes; so that it is not safe to infer its inclination from some one or two *unworn* teeth that may possibly remain after the others are lost or worn down.)

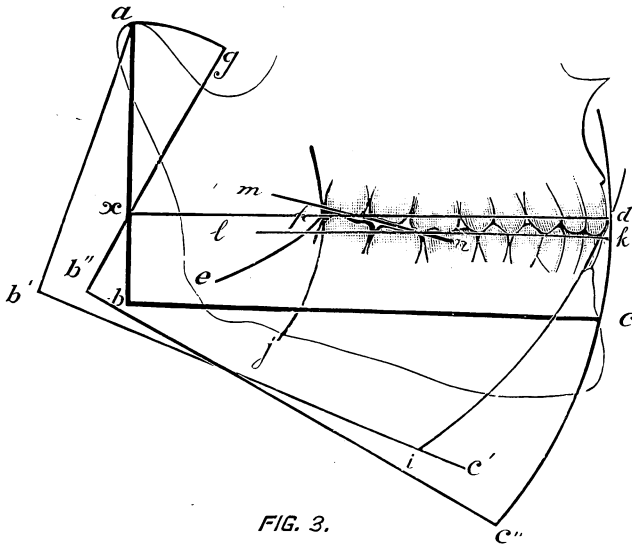


FIG. 3.

We are now ready to consider the rules.

**Rules for
Articulating
Artificial Teeth.**

Rule I. The casts should be set on an articulating frame which gives not only the vertical bite, but also the lateral and the incising bites.

It is utterly impossible to scientifically adjust porcelain teeth upon an old-style articulator possessed of only the up and down motion; unless, indeed, the teeth are without cusps and overbite; and even then it is difficult. The Bonwill articulator, or some of its congeners, having the three movements of the human jaw, is a necessity to success.

Rule II. The casts should be placed on the articulator and the teeth set up so that the occlusal plane of the teeth will be directed to the joints of the articulator.

PROSTHODONTIA

Fig. 3 will illustrate this rule. Let $a b c$ be the lower jaw when closed, a being the condyle—the joint. Now if the human jaw opened as do most articulators, this line would assume the position when open shown by the line $a b' c'$, and the last molar would, in closure of the jaws, come up in the direction shown by the arc $e f$ (this having a for its center), which would require that the muscles of mastication be placed much more forward on the upper jaw than they are. The fact is that in nature the condyle a moves forward along the path $a g$, so that the lower jaw when lowered occupies the position of the line $g x b'' c''$, or nearly so. This point x may therefore be considered the veritable joint of the jaw. For convenience of description let us call it the X joint, though perhaps it ought to be called the Kerr joint, Dr. Kerr being, I think, the first to point out these facts. It will be observed that the arc $j f$, drawn from this point x , as center, causes the last molar, when near closure, to ascend virtually vertically.

That this X joint is located somewhere near the place (x) shown in the figure, is beyond question; but that it is exactly there is not so certain; therefore I submit my reasons for locating it at precisely this point. And first, as regards its location vertically: (1) a line ($x d$) drawn through the occlusal plane of these teeth (and the jaw and teeth in this figure are a copy of the very perfect denture of a skull, the photograph of which has appeared extensively in the dental journals as an illustration of "typical occlusion of the teeth") touching the lower incisor point and the last buccal cusp of the third molar, leads to the point x ; and as a line so drawn marks the occlusal plane, and *as the occlusal plane must necessarily be on the same plane as this joint* (as will be explained later), it follows that this point x must be its correct vertical position, or very nearly so. (2) If this point x were considerably higher up than it is on the line $a b$, then when the jaws were opened the angle b would be carried much farther backward than it really is; and that this backward movement is slight the reader may readily assure himself by placing his finger on the angle of his ramus and opening his jaws. By then placing his finger three-quarters of an inch higher up the ramus, he will reach a point where it remains virtually stationary while the jaws are opening and closing.

Now as regards the position of x horizontally: (1) It is here perpendicular to the condyle, which it seems reasonable to suppose it should be, because this makes it the hinge for the lateral bite as well as for the incising bite. If this X joint were placed, say, a half inch inward from x toward d , thus making it not perpendicular to the condyle, the mechanics of the jaw would be sorely complicated thereby. (2) The writer tested this matter in his own mouth, by biting into a very thick mass of wax,

ITEMS OF INTEREST

being careful to avoid protrusion of the lower jaw, then measuring from this wax the distance apart of the incisors, then the distance apart of the last molars, adding the overbite to the former; then drawing on paper two lines corresponding to these two measurements, placing them as far apart as said incisors were distant from said molars; then finding how far two other lines intersecting the ends of these first two must extend to come to an angle. This distance was found to be four and one-quarter inches. A second experiment was made, partly to verify the first and partly to see if any difference would result from closing the bite—this latter trial being made with a thin piece of wax. The latter result was four and five-sixteenth inches—an inappreciable variation of one-sixteenth of an inch. And that the measurement went over four inches (the average distance) is accounted for by the fact that the writer's teeth and jaws are somewhat above the average size.

Now to apply these facts: If teeth are set up on an articulator (whether having three motions or only one) with their occlusal plane not pointed as in Rule II, but directed more or less below the joints of the instrument, the result will be that in the closing of the jaws of the articulator the teeth will travel about in line with the arcs ef and id (Fig. 3), and when said teeth are transferred to the mouth they will travel the arcs if and $c''d$, with the result that in both the incising and lateral bites (that is, whenever the teeth occlude with the jaws still somewhat open, not in full occlusion) the lower teeth will in the mouth be more forward than they ought to be by the amount of divergence of the arcs di and dc' at a point from their junction distant the length of the overbite, which in the figure is seen to be about one-eighth of an inch, and the divergence about one-sixteenth of an inch. *This will cause collision of the cusps in passing each other in the lateral bite, and too early occlusion of the last molars in the incising bite.*

At St. Louis Dr. Campion drew attention to the hitherto unobserved fact that for about the first centimeter of separation of the jaws, if the mandible is not protruded while opening or shutting, the condyle does not move forward along its path, but remains in its socket, simply rotating therein; from which he inferred that, seeing that it is only with this first centimeter, or less, that the prosthetic artist has to deal, therefore the old-style articulator is correct as regards the position of the joints, and that models and teeth ought to be set on these frames so that the occlusal plane points below, not toward, the joint. *The doctor mentioned that he was careful to avoid any protrusion of the lower jaw while making his experiments.* I think he overlooked a vital point—that in both the incising and lateral bites the lower jaw is protruded. This fact seems to me to destroy his conclusions.

PROSTHODONTIA

Dr. Campion also claimed that his experiments proved that the path of the condyle varies, sometimes descending (as in *a g*, Fig. 3), sometimes being horizontal, and in one instance even ascending. Not only this, but he claimed that it varies in different parts of its path, and is even so erratic as to have no regularity in these variations. This would seem to indicate that the cartilage of the condyle path undergoes changes wrought by undue pressure caused by the wearing away or loss of those molars of the lower jaw on which ought to fall the brunt of pressure. From calculations based on Fig. 3 (but omitted from the figure because they made it look too complicated) the writer found that when the divergence of the path is at its two extremes the space made at the molars by the occlusion of the incisors, or *vice versa*, is about one-thirtieth of an inch—supposing the joint to remain fixed at *x*. If raised above *x* the difference is greater; if dropped below, less.

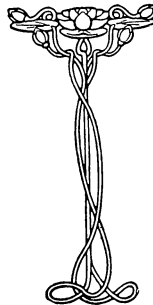
Verifying Experiments Suggested.

The reader who has a Kerr articulator (this instrument having its condyle path adjustable) can readily demonstrate to himself that the above calculation is about correct; for if he will set the adjustable path at one extreme position, then wax up exactly as in taking the bite, so that the upper and lower planes of wax occlude precisely, and so that their plane points to the joints of the articulator, he will find, if he will then change the adjustment of his path to the opposite extreme, that when the lower wax is protruded about one-eighth of an inch (which is the usual protrusion of the lower jaw in the incising and lateral bites) either the front or back portions of the wax (according to which position the path was in when the wax was carved) will occlude so as to leave the other end of the wax bite spaced about one-thirtieth of an inch. To accomplish this in the mouth of the patient, the dentist may proceed thus: Having carved his wax bite as usual on his trial plates (for this method can be used only with the carved not the "mush bite," and the "True-bite plates" are well adapted for it), and having been careful that the occlusal plane of the wax is perfectly flat throughout and is directed straight to the X joint in the mouth, let him have the patient protrude the lower jaw as far as possible (which is usually about three-eighths of an inch) and let the dentist then, first, mark with a scratch on the wax the extent of this protrusion, and, second, observe how the planes of wax now occlude. If the path of the condyle be parallel to the line of protrusion of jaw, full occlusion will remain, but if the path inclines downward, occlusion will occur only in front. The space thus made at the posterior part may then be gauged by inserting any convenient article, such as a knife blade or carved strip of orangewood, which, after the bite has been removed to the articu-

ITEMS OF INTEREST

lator (which must be done with the plane of wax directed the same as it was in the mouth, that is, to the X joint) may, if there was any posterior space, be reinserted in the wax as a guide by which to adjust the path of the condyle on the articulator. When this path is so set that the knife blade or wood strip fits back into its place in the wax at the same time that the lower jaw of the articulator is protruded as far out as it was by the patient (as indicated by the scratch on the wax), then the path of the articulator will be at the same angle to the occlusal plane as was the path of the condyle in the patient. If there was no space it is simply necessary to adjust the articulator so that their condyle path is on a line with the occlusal plane.

(To be continued.)





Prophylaxis as Related to Orthodontia.

By DR. H. C. FERRIS.

Read before the American Society of Orthodontists.

This theme, while old, seems to have been overlooked in the rapid development of this specialty, or else writers have considered that men sufficiently intelligent to undertake its practice, would use ordinary precautions. However, I make bold to present this subject for your consideration.

Our field of operation is one of low vitality, owing to perverted nature, caused by nasal obstruction in a large percentage of the cases, making mouth breathing a necessity; producing an abnormal development of the mucous tissue of the oral cavity, and air passages. The antiseptic qualities of the nasal mucoid secretions having been lost, the air passes through the mouth and the lungs are laden with bacteria owing to this abnormal action. The hypertrophy of the faucial and pharyngeal tonsils, render them more susceptible to the attacks of all the animal and vegetable bacteria that are found in nature.

The physical condition of these patients due to this abnormal functioning, renders their system less able to resist attacks of bacteria, such as the diplococcus of pneumonia, bacillus of diphtheria, etc.

The accumulation of carbohydrates and proteid substances after each meal, form the best food for nourishment of oral bacteria by clinging to the metallic appliances both stationary and removable, and are with difficulty removed with most careful mechanical means. In most mouths

ITEMS OF INTEREST

the characteristic fermentation occurs after each meal without such appliances; therefore, with them and their accumulating tendencies, this action is proportionately increased. The formation of carbohydrates is accompanied by the production of certain acids of which lactic acid is the chief.

The decomposition of albuminoids results in alkaline reaction. When two are mixed they produce a mild acid reaction, depending to a degree on a particular form of bacteria acting upon the mass, and partly to the nature of the food and the percentage of the carbohydrates in it. According to the percentage of excess of lactic acid formed during the fermentative action of certain oral bacteria on the carbohydrates in the mouth, we find the pathological conditions of the mucous surfaces increased, as a hyper-acid condition of the oral secretions proves to be one of the irritating causes of disease of these tissues, lowering their functioning ability and thereby rendering them more vulnerable to any form of micro-organisms.

Can we afford in our effort to assist nature to establish a normal occlusion, to neglect our hygienic precautions during this process, by placing materials in the oral cavity which increase the surface for accumulation and culture of these organisms, without endeavoring, with the means we have at hand, to reduce the quantity of their reproduction? By bacteriological experiments we learn of the rapid growth of these organisms in the oral cavity, and we find by clinical experience, that the teeth and appliances are rapidly covered with oleaginous substances which become a favorable medium for their culture.

The antiseptic qualities of the copper used in some of these, we appreciate, but we know that colloidal copper which produces this antiseptic action is only given off while the metal is polished and free from albuminoid deposits. So when wires containing this metal are not submerged under the gum tissue, this antiseptic action is soon lost; therefore, we must look to other means for cleansing these surfaces.

Again in the adjustment of wire ligatures, even in the most skilful hands, the operator is apt to puncture the mucous tissue, and as these wires presented to us by the trade are found to be bacteriologically unclean, we are liable to infect this susceptible subject.

We have a few cases on record, one of which was reported to the Second District Dental Society of the State of New York, of tuberculosis in its most virulent form, from the use of a septic dental scaler, which resulted in the death of the patient. The difficulty of tracing these infections to the hands of the dentist, is the reason for fewer reports of this character. Simple methods in technique can in a large extent control such infections.

If on the contrary, we find that the wires furnished us by the dental supply houses are sterile, they are liable to be infected by handling. The composition put on the market by Dr. E. H. Angle, will frequently give negative bacteriological results, as tube No. 1 will prove. (Demonstrating.)

This bouillon tube was infected by a wire of this make and kept in an incubator in Seney Hospital laboratory under the care of Dr. Dexter, pathologist, and was accompanied by tube No. 2, which contained some of the same bouillon, which was infected with serum from a septic wound, and was introduced into the incubator at the same time as tube No. 1, and developed the culture you see in half the time. This single experiment does not prove these wires all sterile when they reach our hands, and the method of sterilization is so simple that we should run no risk.

Sterilization of Ligature Wires.

By introducing a bundle of wires into a U shaped glass tube, we may sterilize the contents, either by boiling in a saturated solution of sodium carbonate for twenty minutes, introducing a small cork, and allowing them to remain in the solution; or by exposing them to the action of formalin gas for eight hours; or by allowing them to remain in a colloidal copper solution for one hour; or by sterilizing with dry heat. By any of these methods, we may be reasonably sure we have a sterile product. Each method has its advantages and disadvantages. The preference would be given to that of boiling, as it does not require repetition, the solution protecting the wires from oxidation and from re-infection from the air and hands.

Mouth Sterilization.

Our field of operation is the most septic of any cavity in the body, therefore the first step in the technique should be to render the field aseptic.

We first mechanically cleanse the teeth with frictional material, as thoroughly as possible, then spray the parts with antiseptic solutions under high pressure, which will destroy the bacteria present. We have numerous antiseptic agents of varying value, from which we may select one sufficiently powerful to meet the case. The most cleanly patients, naturally present the most healthy tissues; but their susceptibility to infection, owing to the general condition, must be taken into consideration.

To prove this necessity, a wire that had been worn three weeks without prophylactic care was taken from a mouth. It was gently scraped with a sterile platinum loop by the pathologist; the wire was placed in one bouillon tube and the scrapings in another. The former developed no culture, evidently proving the antiseptic qualities of the composition, as

ITEMS OF INTEREST

the surface was enabled to give off colloidal copper. The latter was used to infect another tube which produced a culture. A microscopical slide developed the presence of bacilli, diplococci, and micrococci.

There are solutions that are largely alkaline with little antiseptic value; but the patient's sense of taste must not be considered to their detriment. The solutions which are sufficiently strong in antiseptic value, are not particularly pleasant; but if our efforts be sincere, they must be thorough. There are two drugs which are accepted by our authorities, which we may employ. The first may be used in mild conditions, and consists of:

℞ Trikresolm. xxx
 Oil of Cassiam. xx
 Aq. dis. ad. q. s.oz. iv
 M. Sig. To be used in spray at a temperature of 105 degrees F.

The active principal of this solution is the trikresol, the oil of cassia being used to disguise the disagreeable taste. The former is a clear watery liquid, having three times the disinfecting value of carbolic acid, while it is three times less poisonous, and less caustic; and is composed of ortho-cresol 35 per cent., metro-cresol 40 per cent., and para-cresol 25 per cent. In bacteriological experiments undertaken by Major Walter Reed, Curator of the Army Medical Museum in Washington, he found that a 1 per cent. solution of it accomplished as much as a 4 per cent. or 5 per cent. solution of carbolic acid. It is particularly valuable for our purpose, as it is active in fluids rich in albumen; being neutral in reaction it leaves the metallic surfaces bright. It is also readily soluble in aqueous solutions.

In acute conditions, when we require a stronger antiseptic, we may use a solution composed of:

℞ Iodinem. xix
 Potassium Iodidem. xix
 Aq. dist. ad. q. s.oz. iv
 M. Sig. To be used in spray under high pressure at a temperature of 98 degrees F.

The antiseptic value of iodine has been recognized for centuries. This agent in its powdered form, iodoform and aristol, is a standard in our hospitals. It possesses a quality which produces the destruction of a capsule of the spores that bichloride of mercury does not possess. It has been recently found that the solution of this drug becomes more potent

ORTHODONTIA

when potassium is combined with it, increasing its solubility. The American Pharmacopoeia, of 1906, directs the addition of potassium to all tinctures of this drug. The solution here recommended, when sprayed in the oral cavity, will fix the plaques of bacteria so they may be detected upon the surfaces of the teeth as well as on the appliances. In order to remove these plaques a mixture of

℞ Starchdr. iii gr. ii
Aq. dist. ad. q. s.oz. iv

will convert the iodine into an iodide of starch; which is more readily washed off the surfaces with a solution of:

℞ Sodium Carbonate.....gr. xviii
Oil of Gaultheriam. xxx
Aq. dist. ad. q. s.oz. iv
M. Sig. To be used in temperature of 115 degrees F.

This last solution also tends to free the surfaces of oleaginous matter.

After this treatment we can be reasonably sure that we are working on sterile tissue, and the liability of infecting our patients is reduced to a minimum.

The necessity for sterilizing our hands, using a
sterile brush with green soap, and immersing them
in an antiseptic solution, preferably 3 per cent. cam-
phenol, which should stand in a bowl within reach of
the operator for freeing his hands of mucus during his work; the boiling
of pliers, scissors, mouth-mirrors and carriers, between patients, are pre-
cautions that no intelligent operator can neglect. Instruments such as
lances, scalpels, etc., may be boiled for twenty minutes in glass tubes
in a saturated solution of carbonate of soda, and placed in the cabinet
ready for use at any time.

The prophylactic treatment at each visit, once a week, requires but fifteen minutes, and the results are remarkably satisfactory. The patient is directed to be particularly careful in cleansing the mouth, and is given a solution as follows:

℞ Hydronapthol
Mentholaa gr. xxx
Oil of Gaultheria
Oil of Cassiaaa m. iv
Sp. Vin. Rectoz. x
Tinct. Capsicumdr. x
Aq. dist. ad. q. s.oz. xx
M. Sig. Teaspoonful to half-glass hot water.



ITEMS OF INTEREST

to be used twice daily, morning and night, and in acute conditions, five times daily, holding the same in the mouth for three minutes. A mouth thus cared for, will show little, if any, inflammation even in the presence of irritation, and the operator may feel that he has done all in his power to protect his patient. Tube No. 6, is a bouillon solution in which is a ligature wire which had been worn in the mouth for one week under this prophylactic treatment. It was gently scraped with a sterile platinum loop by the pathologist, the wire being placed in one bouillon tube and the scrapings in another, and at the end of three days developed a negative result.

I am indebted to the following gentlemen for many of the scientific facts used in the presentation of this subject: Dr. T. H. Dexter, Dr. G. E. Hunt, Dr. T. W. Brophy, Dr. A. W. Harlan.





History of the New Jersey State Dental Society.

By DR. A. IRWIN, Camden, N. J.

Read before the New Jersey State Dental Society, Asbury Park.

Evolution of a State Dental Organization.

A history is a record of events in the order which they occurred, with the cause and effects. Dr. J. Hayhurst wrote historical reminiscences covering a period of twenty-one years, and Dr. Chas. A. Meeker drew a brilliant sketch of twenty-five years of official life, but the profession has no history of our Society for the thirty-six years of its existence.

A complete history of the New Jersey State Dental Society would fill several volumes. The problem thus presented is—How to condense volumes into pages?

No one has yet compressed history into five thousand words when fifty thousand words could not do the subject justice. Therefore, I shall not attempt it.

The achievements of the New Jersey State Dental Society are related in narrative form. Those who choose “to read between the lines” will discover the evolution of a great state dental organization. Coincident with this evolution and depending on it will be disclosed a powerful agency in training professional men into scientific experts, who have shaped the destiny of this organization, which in turn has made it possible for them to become famous. Professional men from all parts of the State, experts of national repute and international celebrities have honored the meetings of the New Jersey State Dental Society by their pres-

ITEMS OF INTEREST

ence and scientific participation, while the Society has conferred an honor upon distinguished dentists by inviting them to participate in our conventions.

One of the many causes which led up to the formation of our State Society is contained in a question addressed to a dental journal in 1869, "Is There a Dental Society in New Jersey?" the answer was—"New Jersey has no Dental Society, we are sorry to say."



DR. J. HAYHURST
President 1870 to 1871

A pioneer in the formation of our State organization says: "That answer stung me to the quick, and I resolved she would have one. I set to work at once and never rested until it was an accomplished fact. While I received encouragement from many who are now prominent members, I met some who threw cold water on the project and predicted that we would have one meeting, and after that the whole thing would die out, kindly saying: "Young man, you must remember that this is Jersey."

The New Jersey Dental Society was organized October 25, 1870, in the lecture room of the Y. M. C. A., at Trenton, N. J., in response to a "Call" signed by twenty-seven prominent dentists in the State; two of whom, Drs. C. S. Stockton and Edwin Chew, survive at this date. The

"Call" is indicative of ardent hopes, lofty aspirations and a spirit of intelligent activity. It is quoted to remind you of the objects for which our Society was created:

The Call.

"The entire dental profession of the State of New Jersey are hereby cordially invited to meet in convention, in the City of Trenton, Tuesday and Wednesday, October 25th and 26th, A.D., 1870, for the purpose of forming a State Dental Society, and to devise and adopt such other measures as may be deemed essential to our mutual improvement, and for the elevation of our common profession.

"Let no dentist, who has the good of his profession at heart, stay away. Let us all be there, and by our action in convention show our sister States that New Jersey is in full harmony with them in any movement that will tend to advance the standard of the profession of our choice.

(Signed)

Jacob Perkins, Beverly, N. J.	A. G. P. Colburn, Newark, N. J.
Leo. H. Delange, Bordentown, N. J.	G. F. J. Colburn, Newark, N. J.
A. W. Kingsley, Elizabeth, N. J.	A. W. Crane, Newark, N. J.
A. A. Pierce, Elizabeth, N. J.	J. R. Reid, Newark, N. J.
Clarence E. Tallman, Freehold, N. J.	G. B. Garrison, Newton, N. J.
S. W. Dickerson, Hackettstown, N. J.	J. W. Pool, Newton, N. J.
J. R. Goble, Hoboken, N. J.	E. F. Hanks, Rahway, N. J.
D. C. McNaughton, Jersey City, N. J.	Chas. Dippolt, Trenton, N. J.
J. Hayhurst, Lambertville, N. J.	L. E. Reading, Trenton, N. J.
J. S. Simmerman, Millville, N. J.	Thos. S. Stevens, Trenton, N. J.
C. S. Stockton, Mt. Holly, N. J.	T. B. Thorne, Trenton, N. J.
J. P. Geran, Mateawan, N. J.	G. R. Chambers, Vineland, N. J.
J. Naylor Bradfield, Newark, N. J.	J. L. Trowbridge, Washington, N. J."
E. H. Bunting, Newark, N. J.	

Organization Meeting, 1870.

A charter member writes: "We had a splendid meeting, perfected our organization, and the New Jersey State Dental Society became an accomplished fact."

Dr. C. S. Stockton voiced the sentiment of all by saying: "May it continue in existence so long as there are teeth to fill and dentists to fill them."

The first meeting was called to order by Dr. J. Hayhurst. Dr. Fowler of Newark was elected temporary president and Dr. E. F. Hanks, secretary pro tem.

ITEMS OF INTEREST

A constitution and by-laws were adopted. Officers were elected for the ensuing year.

The opening topic was "The Application of the Rubber Dam." Some of the members doubtless became twisted in the heat of the discussion, as our patients do to-day and called it "Dam(n) Rubber."

Dr. A. W. Kingsley gave a clinic on the same subject. He declared that "if he were compelled to give up all that he had learned about



DR. A. W. KINGSLEY
President 1871 to 1873

dentistry during the previous ten years, with the privilege of reserving one thing, it would be the rubber dam. This *profane* topic was followed by a debate upon the "Separation of the Teeth," when some even questioned the propriety as well as the manner of the operation.

The subject of "Taking Impressions" was also discussed.

First Annual Convention, 1871.

The first annual convention occurred in Newark, July, 1871, Dr. J. Hayhurst presiding. Among the fifteen dentists elected to membership were some who afterward became famous in dental annals and left the stamp of their genius upon the history of our Society, particularly Drs. Chas. A. Meeker, and Geo. C. Brown.

Dr. Straight's Patent Flexible Edge, and Weston's Metal and Cellu-

loid Plates were considered. Drs. Delange and Hanks gave clinics by filling teeth with gold, using the Rubber Dam and Morrison Engine. The members adopted these labor-saving devices with alacrity.

There was projected at this session a series of "offensive and defensive tactics, which published to the world the fact that our Association is a progressive organization and handles the different problems presented in a radical manner. At this meeting Dr. Colburn described "Bacon's Method" of trapping dentists who use vulcanite without a license.

The Executive Committee was authorized to defend the first member of the Society who should be sued under the Cumming's patent.

War was declared upon "Quackery" by the New Jersey State Dental Society—strongly denouncing and protesting against the practice of advertising cheap dentistry, now in vogue by those claiming to be dentists.

Dr. A. W. Kingsley presided at Long Branch,

Second Annual July 9, 1872.
Convention, 1872.

Dr. F. C. Barlow was elected to membership.

He became one of our most active members, striving earnestly for many years to raise the standard of dental education and filling all the offices efficiently within the gift of the organization.

Clinics were given by Drs. W. H. Dibble and L. W. Reading, illustrating the "Use of Varney's Points, the Steel Mallet and the Morrison Engine." The subjects for discussion were the "Use and Abuse of the Mallet;" "Is it Possible to Bleach a Tooth After Discoloration?" "Oxychloride of Zinc as a Capping for Exposed Nerves and Fillings;" "The Relative Merits of the Various Preparations of Gold;" "The Use of Phosphate of Lime."

Dr. Louis Jack exhibited his "Matrix Method" of filling a tooth.

The thanks of the Society were extended to Drs. S. S. White for his defence of the Gardener suit in the United States Court and the aid of the Society was tendered to him in any future litigation on the Cumming's patent.

Third Annual session of 1873 at Long Branch. Among those
Convention, 1873. elected to membership were Drs. Adelberg, A. J.

Freeman and E. M. Beasley who have reflected great credit upon the Society during many years of service, Drs. Adelberg and Beasley each filling the office of President with marked ability.

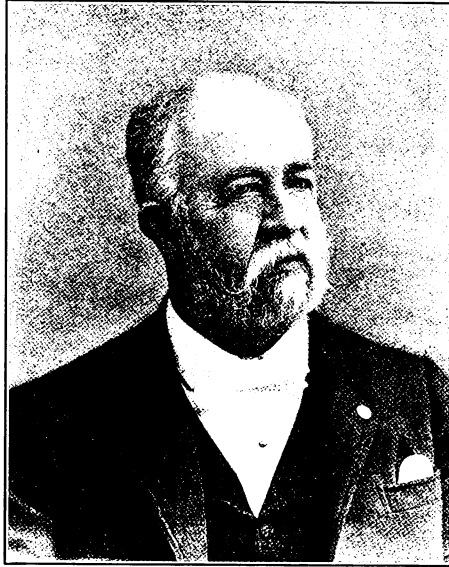
An Act establishing a Board of Dental Examiners was presented by the Committee on Legislation. The first board consisted of Drs. C. S. Stockton, J. Hayhurst, D. H. Delange, L. E. Reading and D. C. McNaughton.

ITEMS OF INTEREST

The Society was incorporated July 14, 1873.

The custom of selecting delegates to other societies was instituted, five members being delegated to the American Dental Association, meeting at Put-in-Bay, August 5th, and we made our National "debut."

The subjects considered were "Toothache," "Capping Pulps," and "Treating Diseased Pulps." In the discussion that ensued the remedies suggested as efficacious were nearly as numerous as the members in debate.



DR. G. C. BROWN
President 1874 to 1875

Dr. S. S. White exhibited his "Electric Automatic Mallet," and Dr. D. L. Jack reviewed the "Rubber Question" under the persecution of Josiah Bacon which incited the following motion: "Resolved that the New Jersey State Dental Society pledges itself to use all honorable means to protect the rights of the profession in the use of rubber and against the 'persecutions' by the so-called proprietor of the patent, under which these persecutions are made."

Dr. Frank Abbott, of New York, gave a clinic with the Automatic Mallet, Dr. Louis Jack with the S. S. White Engine and Electric Mallet; both arousing great interest in their operations.

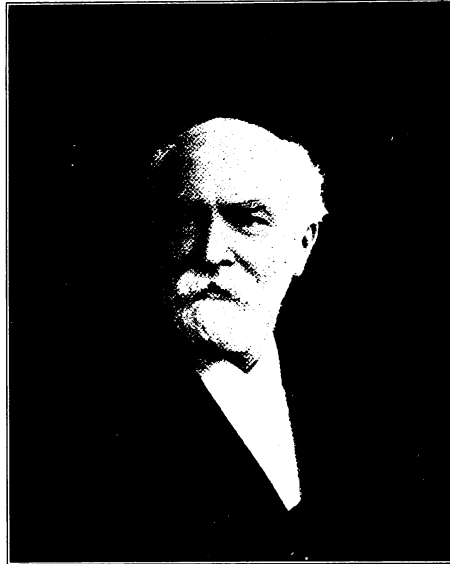
Governor Joel Parker was introduced and gracefully assumed the role of a "Buzzing Hornet." The genial Governor enjoyed himself im-

mensely, with the members of the Society, who greatly appreciated the humor and tact of the Chief Executive.

**Fourth Annual
Convention, 1874.**

The fourth annual meeting was held in the Historical Rooms at Mt. Holly, July 14, 1874, Dr. J. W. Cosad presiding.

Among others proposed for membership was Dr. Thos. B. Welch, who became a president, and was a staunch sup-



DR. C. S. STOCKTON
President 1875 to 1876

porter of the Society for many years. He left a priceless legacy to the dental profession in the form of a pure life, an unimpeachable dental reputation and an example of incessant activity, which all dentists could emulate with profit.

After the President had read his annual address, Drs. Freeman and Barker of Philadelphia were invited to participate in the discussions. Dr. W. E. Pinkham read a paper on "Alveolar Abscess;" Dr. E. M. Beasley described the "Morrison Engine" and Dr. J. Hayhurst read an essay on "Dental Instruments."

A friendly greeting was wired from the Pennsylvania State Dental Society in session at Wilkesbarre, Pa., and appropriately answered. Thus the outside world recognized a new factor in shaping the destiny of our profession.

ITEMS OF INTEREST

During this year a "Memorial" page was placed in the minute book for a record of deceased members and the name of Dr. Lyons M. Pearson entered therein.

A member comments thus on the "Pleasant Rooms of the Historical Society." "I think if I live a thousand years, I shall never forget the 'cool' rooms of the Historical Society in Mt. Holly. A red hot bake oven would have been no comparison; but the hospitality of our friends there more than equaled the warmth of the rooms and fully compensated us for baking."

The truth about this Mt. Holly meeting is that "Foxy Grandpa" Stockton represented that the Garden of Eden was originally located in Mt. Holly and its entrancing bowers contained the most beautiful and charming girls in the State. With enticing words of man's wisdom, supplemented by the blandishments of the fair sex, he cunningly inveigled the innocent members of the New Jersey State Dental Society away from its infantile home—Long Branch; but the time had not arrived for this lusty infant to be weaned, for the next year President Geo. C. Brown officiated at the Fifth Annual Convention in Long Branch.

The President's address referred to the value of properly prepared amalgam, skilfully inserted in suitable cavities. The growing popularity of celluloid for dental plates was mentioned, and its use was recommended as a desirable release from the tyranny of the "Obnoxious Rubber Co." The examiners granted four licenses to practice dentistry.

Fifth Annual Convention, 1875.

Dr. T. B. Welch read an essay condemning "Haste to Make Money," and lauding perfection of operations rather than speed. Dr. C. S. Stockton discoursed on "Dental Education," calling attention to the extreme haste of the profession in manufacturing dentists out of students. "Haste to get rich is the glory and vice of the American." Dr. Stockton's verdict was: "I know of no better way of promoting dental education in New Jersey than by faithful attendance upon the sessions of our State Society." This assertion is just as true to-day as it was then.

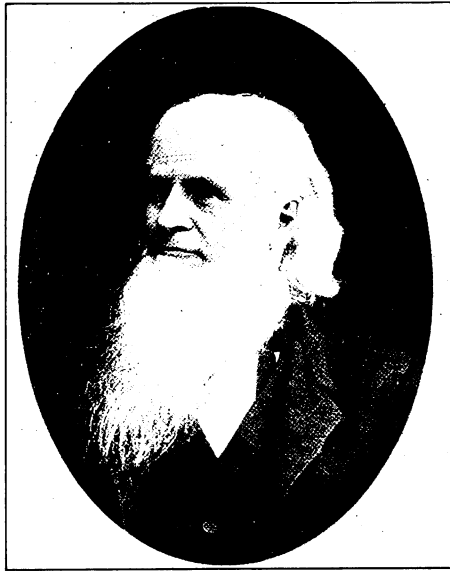
Dr. Chas. A. Meeker urged that the examination of the Board of Censors should be *so thorough* that the "Diploma" of the Society will be an honor to hold although the candidate possesses the degree of D.D.S. also. "We should work for the *elevation, education, and character* of the Society."

Dr. G. D. Perrine of New York explained "The Use of the Galvano-Cautery Battery." He claimed that it was the "advance" of the age. It

was apparently the forerunner of cataphoresis, both being designed to obtund sensitive dentine by means of electricity.

Dr. J. R. Goble read a paper on the "Cause and Cure of the Absorption of the Alveolar Process" which Drs. Abbott and Kingsley discussed.

Dr. C. S. Stockton, the newly elected president, was authorized to welcome the American Dental Convention which was announced to meet at Long Branch in August.



DR. T. B. WELCH
President 1876 to 1877

The "Dental Luminary" appeared above the horizon this year in the form of a small pamphlet designed to enlighten the public mind, but after a meteoric career, it disappeared from view.

Dr. Hayhurst addressed the convention upon the subject of the "Best Method of Inserting Artificial Plates."

Dr. E. F. Hanks read an essay on "Amalgam," which was a trenchant vindication of this much abused filling material, and it appeared at a most opportune time.

Dr. L. H. Delange, in a paper entitled: "Rubber versus Celluloid," asserted that the advantages of celluloid over rubber were cleanliness, strength, color, toughness, lightness, adaptation to plain teeth, and com-

ITEMS OF INTEREST

patability with the mouth. Last but not least, he declared: "We can save our 'Bacon' by using celluloid instead of vulcanite."

Sixth Annual Convention, 1876.

A new era dawned upon the New Jersey State Dental Society, July 8, 1876, in Congress Hall at Atlantic City with President Stockton in the chair.

This convention was inspired by the presence of some of the most brilliant speakers, profoundest thinkers, and skilful workers in the profession; such as Drs. Wm. H. Atkinson and Elisha Townsend, Dr. Gildea of California, Professors Darby and Barker, Drs. Marshall B. Webb and W. G. A. Bonwill.

President Stockton, in a few appropriate introductory remarks, described the pleasant reception accorded him at the New York Dental Society meeting, and Dr. J. Hayhurst read a paper upon the "History of Dentistry."

Dr. Gildea of California in opening the discussion commended the "research" displayed in the paper and spoke concerning the "early fillings," tin being used first, and the excellent work performed by this material. He asserted that "Nearly all the knowledge of the profession was in the form of *trade secrets* until after the establishment of *dental colleges*."

Dr. W. H. Atkinson estimated the "cost of learning" when he was a student from nothing up to five hundred dollars, the instruction consisting of the manufacture of a few instruments, extracting teeth and clipping off roots for the insertion of pivot teeth. He thought the first systematic education came from the dental colleges. In conclusion he inquired: "Which does the most good, the local societies or the dental colleges?" Where the societies exist, the colleges flourish. He concluded that the societies and colleges were co-workers and indispensable to each other, which sentiment we can heartily endorse.

Dr. Welch explained that in a visit to the Philadelphia colleges, he found the students were listeners, not practical workers. In studying the profession they were advised to graduate from medical colleges.

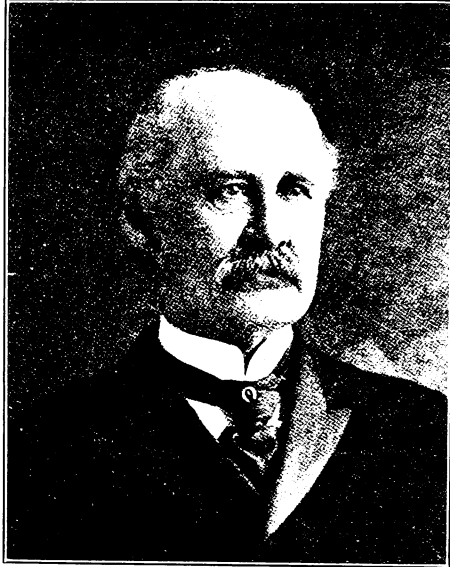
Dr. Barker said: "The colleges simply represent the profession as it is. There are *too* many dental colleges. There should be but *one*."

Dr. E. T. Darby spoke of the honest work performed by the professors in the dental colleges. He felt it keenly to hear the colleges disparaged. As a student he learned more in four months in the college than he dreamed of, and was well satisfied with the time spent.

President Stockton thought that the remedy for "poor workmanship" was "more interest in the dental societies." "Bring such men into our State societies and make better men of them," was his advice. And never hath oracle, ancient or modern, uttered wiser words.

After Dr. Reading's paper on "Mechanical Dentistry" was read, Dr. Barker said it was compulsory in his college for students to do mechanical work for half the session. Mechanical dentistry formerly presented all the beauty of *finished jewelry*, but it had taken a backward step. He begged the fraternity not to give up mechanical dentistry.

Dr. Gildea reviewing the past, said he used five franc pieces hammered out on an anvil using models of sheet zinc. In 1846 air-chambers



DR. E. F. HANKS

President 1877 to 1878

were first used. Later, rubber work appeared, the profession adopting it with hesitation, while the charlatan seized it with alacrity.

Dr. Hayhurst remarked that when he began to practice "thirty years ago" he made all his own tools, his own tooth body, taking the spar from an adjacent field, did his own carving, reduced his metals and did everything from the beginning. All the Mexican and French pieces were then hoarded for dental use. "To-day I can see no such work for beauty of design as there was twenty-five years ago."

Dr. E. F. Hank's paper, "Some Thoughts on Operative Dentistry," was read, and Prof. E. T. Darby declared the vital object of "Operative Dentistry" was "not *how* we filled a tooth, but whether we *saved* it." He exhibited Dr. Bing's method of inserting artificial incisor teeth, also the

ITEMS OF INTEREST

Bing method of repairing molars by "filling with gutta percha and placing a gold cap on top."

Dr. Marshall B. Webb, referring to failures in filling teeth, thought the galvanic action had a little to do with it, but the failures were due to the want of care upon the part of the operator. "In regard to Dr. Bing's method, he considered *cement-plombe* better than gutta percha for setting gold caps." He liked Dr. Hinchman's method of using porcelain for a cap better than Dr. Bing's plan.

Dr. Barker condemned Dr. Bing's process, because of the liability of secretions getting between the enamel and gold cap.

Dr. W. G. A. Bonwill gave a *sensational* clinic with his electric mallet, filling one cavity with cohesive gold in sixteen, and another in thirty minutes, in the upper central incisors of Dr. Smith.

We were passing through the golden days of youth. When an operator came along who could hammer an eighth of an ounce of gold in a single filling with an electric mallet we thought it was reaching the pinnacle of fame, and as early as 1876 we began to wear our *golden crown* with much pride.

Papers were read by Dr. A. W. Kingsley entitled "The Extraction of the Sixth Year Molar," and by Dr. T. B. Welch on "Dental Therapeutics."

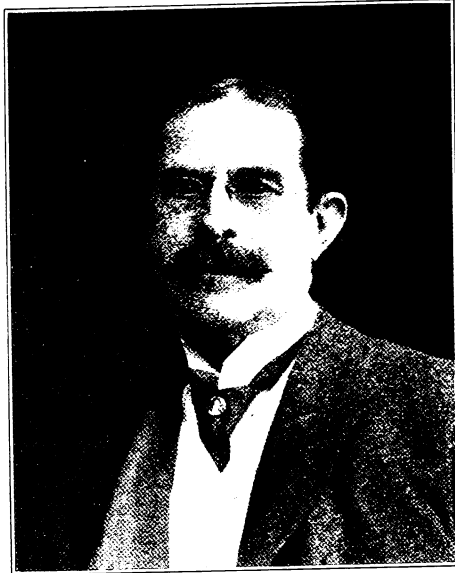
Dr. F. A. Levy was elected to membership. He became a keen and logical debater as well as a faithful officer and guided us wisely through many a stormy session when a safe counsellor was our greatest need.

Dr. Chas. A. Meeker read a paper on "Dynamic Force or the Magnetism of the Sexes During the Dental Operations." Drs. Hayhurst and Atkinson expressed themselves as being pleased with the ideas advanced.

Dr. Bonwill, however, differed with the essayist. He considered that the qualities of magnetism had little to do with the fatigue during dental operations. He then introduced the theory of rapid inhalation of air to produce partial anesthesia so that sensitive dentine could be excavated without pain.

Dr. Bonwill was a colossal egotist. He usually began a speech by talking upon the subject under discussion and then digressed in order to ride one of his own hobbies. A favorite method of introducing his address was to deliberately insult his auditors by telling them that they did not know anything about the subject upon which they were talking and then modestly claimed that he, Bonwill, knew it all. But Bonwill was Bonwill, and we all knew his idiocrasy. He was a mechanical genius, such as the dental world has never known before or since his advent and departure from our ranks.

During the year of 1876 the evolution of a state dental organization progressed rapidly. New fields of investigation were cultivated. Trained workers in the dental profession were becoming developed and fitted for state society work. Intellects were undergoing the process of professional evolution whereby they would ultimately become qualified to influence the counsels of the organization and guide it aright through perplexing problems and open up channels of usefulness, hitherto undreamed of. Expansion was the keynote of the Sixth Convention.



DR. CHAS. A. MEEKER
President 1878 to 1879

The success of this convention was largely due to the untiring energy, indomitable will and sagacious enterprise of President Stockton and Secretary Meeker, who attracted celebrities from far and wide by their united efforts.

**Seventh Annual
Convention, 1877.**

Dr. T. B. Welch presided July 18, 1877, at Long Branch.

Dr. Welch read his annual address, which was an able thesis, replete with suggestions pertaining to dentistry, the adoption of the latest methods in society work, and ending with sensible advice as to how to increase the prestige of the organization socially, morally, intellectually, and scientifically.

ITEMS OF INTEREST

Dr. J. Hayhurst presented a paper upon "Dental Colleges," treating the subject in his usual thoughtful and scholarly manner.

Dr. J. Hayhurst was unanimously appointed State Prosecutor.

Dr. W. H. Atkinson delivered a masterly address upon the subject of "Tumors and Abscesses," which many of our members recall with keen relish up to the present time.

Dr. Bonwill described his electric mallet; also his method of pivoting teeth.

Dr. Hubbard read a paper on "Anatomy."

Oscar Peck read a paper on "Oral Anatomy" which was discussed by Dr. W. H. Atkinson.

The eighth annual meeting was called to order by President E. F. Hanks, in the United States Hotel at Long Branch. The minutes of previous years, printed in book form, appeared, and a copy was sent to each member of the Society. The membership numbered sixty-one at this time.

Eighth Annual Convention, 1878.

The President's annual address was replete with historical reminiscences concluding with a professional discussion upon the subject of "Devitalized Pulp."

Drs. Bonwill and Carmen gave clinics, and H. S. Smith demonstrated the "Working of Celluloid." Dr. J. Hayhurst read a paper on the "History of Dentistry" which was chiefly devoted to the establishment of dental colleges throughout the United States.

A registration committee of five was appointed to prepare a list of all the dentists entitled to practice in New Jersey under the existing law, together with such lists as they could procure from other States. The Baltimore Dental College proffered a free scholarship to the student whom the New Jersey State Dental Society should recommend. John Coult was designated for this scholarship.

A vote of thanks was tendered to the Maryland Dental College for the offer of a free scholarship.

President Meeker called the ninth annual meeting to order at Long Branch.

Ninth Annual Convention, 1879.

Dr. G. Carleton Brown was elected to membership. He became an active worker and served with ability in all positions of honor which could be conferred upon him. It is a unique family record for both father and son to become distinguished in Society work.

Dr. C. S. Stockton reported that he had been received cordially by the New York State Dental Society at their annual meeting. The

registration of dentists with their county clerk required by the New York law was explained and Dr. Stockton thought the New Jersey State law should require a similar registration.

A society badge was adopted.

Dr. C. N. Pierce invited the members to attend the meeting of the Pennsylvania Society at the Delaware Water Gap, Pa., July 29, 1879.

The President's address was read. It might be quoted advanta-



DR. FRED. A. LEVY
President 1879 to 1880

geously now if space permitted. It is a model President's annual address. Read it over before you write your own.

Dr. T. B. Welch read a paper entitled "Little Things," while Dr. Edwin Chew discoursed upon "Vulcanite Vs. Metal Plates for Partial Sets of Teeth" in the most practical manner. The common sense expression of views on platemwork by Dr. Chew aroused an extended discussion.

Dr. Geo. A. Mills read a paper entitled "Strengthening Weak Teeth by the Use of Heavy Gold and Screws; the Use of Smooth Convex Fillers."

Dr. Mills used No. 120 rolled gold, also No. 60 or No. 40 gold foil in combination with iridio-platinum screws for strengthening frail teeth.

ITEMS OF INTEREST

A lively debate followed, when some championed and others antagonized the method, according to their personal opinions.

Five dentists were received into membership, including Dr. S. C. G. Watkins, who became one of the most active members of the Society filling the various offices to which he was elected from time to time with marked ability, besides being a prompt and forcible speaker on the topics which came up for discussion.

Dr. J. W. Scarborough read a paper upon the "Use and Abuse of Mercury." This essay is a remarkable arraignment of mercury, systematically administered. It deals with the subject of pytalism, charges that mercury is the chief source of alveolar absorption and loss of teeth, emphasizing the disastrous systemic effects of mercury when administered internally for the diseases which it is supposed to cure.

The debate which followed was keen and displayed marked forensic ability on the part of Drs. Francis, A. W. Kingsley, E. F. Hanks, W. H. Atkinson and others who disputed these conclusions. Dr. Scarborough pluckily defended his paper. The subject was completely ventilated from beginning to end, thus enhancing its value to the student.

Atkinson was an intellectual giant. In the conflict of ideas his delivery in a dental convention reminded you of the roar of a mighty cannon compared to the snap of Gatling guns and the rattle of musketry. Time has cleared away the smoke of battle and taught us that he hit the mark with deadly accuracy. The debate on mercury and pytalism gave him ample opportunity to show his caliber and this debate with Dr. Scarborough's essay are invaluable for reference to the profession.

Dr. F. A. Levy read a paper on "The Elevation of the Dental Profession to its Proper Standing as a Specialty of Medicine," which subject was a challenge to many dentists at this time for a lengthy discussion, as might readily be surmised by those acquainted with the gentleman.

Dr. J. Hayhurst promptly arose and contended that dentistry is not a specialty of medicine, and the debate was fierce between Drs. T. B. Welch, J. A. Osman, J. P. Geran, A. W. Kingsley, E. F. Hanks, C. S. Stockton and F. C. Barlow. It is not recorded which side won in the contest.

Dr. J. P. Geran read a paper on "Dental Education."

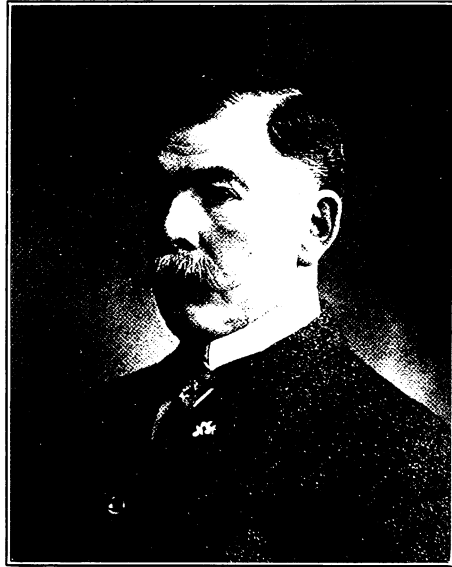
Marcus Nason was elected to go to Baltimore Dental College.

**Tenth Annual
Convention, 1880.**

The convention was called to order by President Fred A. Levy, and treated to a novel sensation by a fellow member—Dr. J. W. Cosad, who opened it with prayer. Heretofore we were not aware that the Society was developing any one's pious proclivities. Our theological de-

partment had not kept pace with the others; such as the commercial, for instance. It was, therefore, an agreeable surprise to some.

C. A. Timme, W. P. Richards, E. H. Bunting, and Geo. E. Adams were proposed for membership at these sessions and became scientific experts in dental society work. Geo. E. Adams an ex-president, and W. P. Richards, a former vice-president, are enshrined in the hearts and will linger long in the memories of our members for many years of



DR. JAMES C. CLARKE
President 1880 to 1881

faithful devotion to its interests, while all of this number have rendered valuable service in increasing the usefulness and prestige of the organization.

Eleven applicants passed the Examining Board.

The regular annual "Breeze" threatened to become a hurricane this year when the next place of meeting was discussed, and an attempt was made to anchor in the haven by the sea permanently in one place. Long Branch finally captured the convention and the "Tempest" calmed.

The Committee on Registration presented their first complete report, which was considered separately and adopted. This committee accomplished a great deal of useful work, which was freely criticized; offering a "bone of contention" at many conventions where the combative faculties

ITEMS OF INTEREST

of noted men were marshalled against each other in the forensic arena.

President Levy's annual address contained three noteworthy announcements. First, the emancipation of the dentists from the thralldom of Josiah Bacon & Co. Second, the death of Dr. S. S. White. Third, the recommendation of the appointment of a Committee on Legislation to secure such a law as would protect the interest of dentists, and compel all dentists in the State to register.

Dr. J. Hayhurst read a paper entitled "Dental Remedies," which did not say anything about the action and uses of medicine; Dr. T. B. Welch read a paper styled "Get to the Front," which was simply an exhortation to excel; J. Allen Osman read a paper on "Mechanical Dentistry, Its Progress and Its Claims," and Dr. C. S. Stockton read a paper on "Dentistry," which for beauty of diction could not have been surpassed by Addison himself. Thereupon, Dr. McNaughton arose and said: "These are very fine essays on morals, and this is a very good prayer meeting, but a very poor dental convention."

Dr. Atkinson took advantage of some allusions in Dr. Stockton's paper to flay the public and professions for the abuse of anesthetics and anesthesia, in his sprightly and pointed manner, finally bringing the discussion down to a professional basis; while Dr. S. C. G. Watkins ably seconded the effort of Dr. Atkinson to keep the scope of discussion within the bounds of mechanical dentistry.

Dr. C. S. W. Baldwin really introduced the subject of dentistry at this convention by reading a paper upon "Dental Hygiene."

Dr. Chas. Pullin read a paper on the subject of "Dental Ethics," and Dr. G. C. Brown an essay upon "Anesthesia."

The tenth annual meeting will go down in history as the Moral Essay Convention. It was also the largest in point of attendance up to this term.

The "Man with the Muck Rake" was busy during the last few years and the cry of "graft" (i. e., commercialism) was raised, therefore, we must conclude that the New Jersey State Dental Society possessed all the elements of an up-to-date organization.

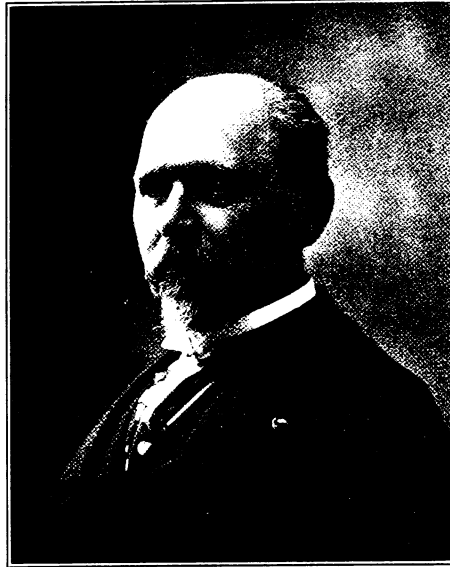
Eleventh Annual Convention, 1881.

Dr. J. C. Clarke presided at the eleventh annual meeting in Long Branch. Nine dentists were proposed for membership. Among them R. M. Sanger, whose combination of literary talent with mechanical ability is as rare as it is valuable, and has often contributed to the success of our conventions, while the incessant activity, long experience and intense devotion to the welfare of the organization manifested by Harvey Iredell is an inspiration to all dental society workers.

The secretary was authorized to appoint delegates to other dental societies. The President in his annual address exposed some of the

pranks of Cupid, who played havoc with bachelor dentists during the year in the State. He also announced that twenty dentists had signified their intention of taking the dental examination, leaving seven "offenders of the law." He recommended that a quiz box be placed upon the President's table.

The papers read at this convention showed marked improvement. The process of intellectual evolution received a new impetus. Accuracy,



DR. FRED. C. BARLOW
President 1881 to 1882

brevity, and keen observation on technical topics were displayed as a rule in the essays which were presented at the meetings.

A paper entitled "The Truth, the Whole Truth, and Nothing but the Truth, So Far as in Me Lies," was not a legal document by E. F. Hanks, but a frank statement of failures as well as success in operative dentistry, and an arraignment of "Dogmatic," so-called "First Class" dentists who claimed to save all teeth with gold.

Eleven speakers debated this paper, which made a deep impression.

J. Allen Osmun's paper on "Conservative Dentistry" followed.

G. C. Brown instructed us upon the subject of "Pathology," and J. G. Palmer discussed "The Conservative Treatment of the Pulp" with his accustomed acumen, while Dr. S. C. G. Watkins read a timely thesis on "The Care of Children's Teeth."



ITEMS OF INTEREST

There was no lack of speakers upon the subjects of these papers, all of which were admirably written and discussed with enthusiasm, thus presenting a sharp contrast to the annual meeting of the year before in this respect.

Dr. Geo. A. Mills performed an operation for "Necrosis of the Superior Maxilla" caused by a central incisor being accidentally driven into the lower edge of the "Sphenoid Wing of the Maxillary Bone."

A resolution of condolence was adopted and forwarded to the family of President Garfield, who had been assassinated.

Dr. Geo. C. Brown explained the results of his visit to Washington in order to prevent the extension of the Goodyear rubber patent, stating that the New Jersey State Dental Society was the only State Dental Society protesting against the extension of the time for the patent.

The twelfth annual meeting of the society was convened by President F. C. Barlow.

**Twelfth Annual
Convention, 1882.**

The resolution passed at a previous convention making Long Branch the permanent meeting place of the Society was rescinded.

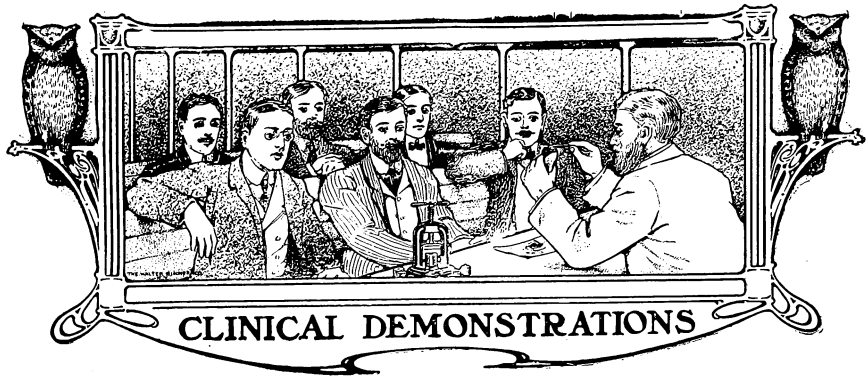
A report on the "Revision of the Constitution and By-Laws" was adopted after voluminous discussion and some amendments, and five hundred copies were ordered to be printed and distributed.

Dr. Barlow recognized "Brevity as the Soul of Wit" in his opening address. He advocated a higher standard of dental examinations and recommended that the State law be amended so as to permit the board to confer the degree of M.D.S. upon any one in continuous practice five years upon "passing a satisfactory examination" before the State Examiners.

Clinics were given on "All Porcelain Tooth Crowns," by W. G. A. Bonwill. "A New Mode Heater for the Construction of Artificial Dentures with Celluloid Base," was exhibited by W. W. Evans. "Heavy Foil Filling with the Electric Magnetic Mallet," was illustrated in a clinic by J. A. Osmun.

Papers were presented entitled "Premature Decay and Loss of Teeth," by S. G. Wallace, "Dentistry Not a Specialty of Medicine," by J. C. Palmer, "Shall Mechanical Dentistry be Separated from Operative?" by E. F. Hanks, "Therapeutics," by L. S. Marsh, all of which were earnestly debated, so that the enterprising dentist could learn and understand the latest and best ideas circulating among scientists.

The twelfth annual meeting was the M.D.S. or Degree Conferring Convention.



Report of Clinics Before the New Jersey State Dental Society.

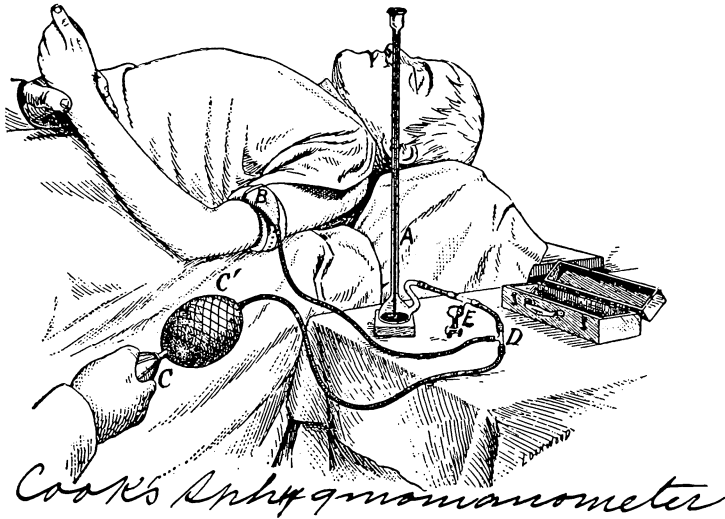
Clinic by Eugene S. Talbot, on the Effects of Excessive Blood Pressure in its Relations to Interstitial Gingivitis.

The action of the heart in its relation to disease until within a few years ago, was only demonstrable by the physician's placing the ear over the heart region and by feeling the pulse at the wrist. Both these methods were very inaccurate. The results obtained depended upon the skill, hearing and sense of touch of the physician. Since no two physicians possessed the same skill, sense of hearing, and touch, it stands to reason that an inaccurate diagnosis resulted.

In 1847, Ludwig by his kymographion gave the first accurate knowledge of the circulation. Since his time, many methods and appliances have been made toward this end. Chaveau and Maray, Fick, Hurthle, and others have worked in this field, some using appliances in which air and water were used for the transmitting of vibrations. Later mercurial manometers fitted with valves so as to record only maximum or minimum pressure gave the best insight into the systolic and diastolic fluctuations of blood pressure by which we may make accurate calculations of our clinical approximation. There are a number of mercurial manometers now in use. Some adapted for hospital purposes, others for office use and still others that may be carried by the physician to the bedside. The instrument I have been using for the past few years is called Cook's modification of the Riva Roci Sphygmomanometer (see illustration). This instrument is the most widely used in this country, and has done most to arouse interest in the study of blood pressure. It is simple and easily manipulated. It consists of an

ITEMS OF INTEREST

armlet, a narrow rubber bag, four and one-half by forty cm., covered with canvas and fastened with hooks and eyes S; Richardson's double tube for inflation CC; a glass T canula joining the connecting tubes from manometer; armlet; bulb D; a pinch cock on a small branch tube for the release of pressure E. The glass reservoir is placed in a wooden stand with a scale marked upon the tube A. The reservoir is now partially filled with mercury and the armlet adjusted to the left arm of the patient above the elbow. The arm of the patient must now be placed on a level with the heart, as observed in the illustration.



The operator with his left fingers upon the pulse of the patient at the wrist forces the mercury with the right hand upon the bulb into the tube. This is continued until the pulse ceases. Note is now made of the height of the column of mercury. Placing the thumb and finger upon the pinch cock, the air is allowed to escape until the pulse returns when note is taken again of the position of the column of mercury. The pinch cock is now opened to allow the air to escape and the column of mercury to return to the reservoir. This experiment is repeated a second time in order to corroborate the first notings.

With this instrument the normal adult female blood pressure is 115 to 125 mm.; normal adult male, 125 to 135 mm. By this instrument, it will be noted that a very accurate knowledge of the blood pressure may be obtained. Indeed, every physician to make a correct diagnosis of his patient must now use one of these instruments.

ITEMS OF INTEREST

We are all familiar with the fact that the heart pumps the blood from the veins into the great arteries, the ventricles first filling, then in a short time discharging their contents with great velocity. The blood moves slower in the capillaries toward the veins than in the arteries. In order that there may be a steady flow of blood through the artery, the coats of the arteries must be elastic to control the flow. In the soft tissues, the expansion of arteries and capillaries takes place. In bone tissue, however, blood vessels are restricted, and therefore when the heart is working harder than normal, the blood vessels become partially non-expansive, irritation is set up in the walls of the vessels due to this pressure and poisonous material circulating in the blood sets up irritation. Inflammation and absorption of bone tissue about the Haversian canals, and the vessels of Von Ebner take place. This inflammation and absorption then, is early manifested in the alveolar process setting up interstitial gingivitis. As one grows older, and especially at the senile period, the eliminating organs do not carry off waste products as readily as formerly. The degree to which these products remain in the system depends upon inheritance and the kind of life that has been led. Inherited taint and excesses tend to weaken the eliminating organs early, hence excessive blood pressure due to the accumulation of poisonous material in the blood may cause interstitial gingivitis and bone absorption earlier than would occur otherwise. (Dr. Talbot here demonstrated the method of the use of the sphygmomanometer.)

Difficult Cases in Prosthetic Dentistry

Dr. H. Irwin, Camden, N. J.

This clinic consisted of twelve cases selected from daily office practice, and included among their number two cases of prognathism, or cases in which the lower jaw protruded beyond the upper, and the bite was reversed. The lower teeth protruded over and beyond the upper teeth. The manner of bite was illustrated by the plates which had been constructed and were in daily use in the mouths of patients.

The first case in prognathism was where an upper and lower partial set of teeth were required for a gentleman sixty years old and of sanguine temperament, who was subjected to daily inconvenience and even torture by three of the lower teeth biting into the gum of the upper jaw.

The manner in which the difficulties were overcome in this case, and the man supplied with plates by means of which he could masticate his food thoroughly with comfort, was demonstrated. These plates have been in use several years, and the gentleman voluntarily assured me that he would not do without them for anything; in fact he would not give

them up long enough to bring the original plates to accompany the models displayed.

The second case in this clinic consisted of an upper and lower jaw in which complete absorption of the alveolar process had taken place and left a flat roof. The place originally occupied by the alveolar process was not only absorbed but concave. A full upper gold plate was constructed, attaching the teeth by means of vulcanite and building out bumpers to supply the place of the lost tissue, and restoring the normal appearance of the face, and has been worn for over seven years with perfect satisfaction.

In the lower jaw a plate was constructed of Weston's metal on account of its weight which was also built up to restore the lost tissue, and this plate has also been worn the same length of time with comfort, being retained in position by the muscles of the mouth and the weight; the most remarkable feature in this case was the length of the teeth required in order to present a natural appearance in the mouth.

Numbers 3, 4, and 5 were cases in which the teeth of the one jaw in mastication came in contact with the gum of the opposite jaw, producing soreness, and from which the patient sought relief. Each one of these three plates was constructed of gold. The third case permitted only cusps to be inserted between the plate and the teeth in the upper jaw. In this way the bite was opened, and the patient was permitted to eat with perfect comfort.

Case No. 5 consisted of a full upper and lower denture constructed of gold with vulcanite attachments.

In this model the lower jaw protruded so far beyond the upper, that it was extremely difficult to construct a practical case in which the suction of the upper plate would not be broken by the extraordinary leverage exerted by the teeth in the lower jaw.

The lower front teeth were the smallest and shortest that could be procured owing to the fact that the patient possessed an extremely short under lip, exposing even the alveolar process of the lower jaw when she opened her mouth wide.

Five of these models were articulated upon the Gritman Anatomical Articulator, and two of them upon the W. W. Crate New Plain Line Articulators.

The interesting feature of this clinic consisted of a number of carved pivot teeth, made to be attached to roots by the old-fashioned hickory wooden pivot. These teeth illustrated the construction of the pivot teeth of seventy-five years ago, and were made by Dr. Edmund Crew of Salem, New Jersey. He is one of the original members of the New Jersey State Dental Society.

ITEMS OF INTEREST

The remaining cases in this clinic were of a miscellaneous character illustrating the various difficult types of mouth which the dentist is daily compelled to provide suitable plates for, and were of such a character as can be only illustrated, and not described by words. (Table Clinic.)

Dr. E. E. Zuster

29 North Ludlow St., Dayton, Ohio

1. Demonstrating an electric oven for the fusing of Jenkins' Porcelain. It has been shown that if the matrix is heated in advance of the porcelain, the porcelain will melt down to the matrix causing the least change of shape of the matrix.

This oven heats the bottom and sides of the matrix just as a flame would do.

2. Demonstrating the use of the Nernst Lamp Glower for the illuminating of the electric oven. This produces a bright light in one part of the oven which casts shadows about the porcelain and which bring out the fusing as clearly as if it were in the open air.

3. An automatic warm air blast in which by the mere act of taking the instrument from its place a blast of air saturated with alcohol is heated to blood temperature at the moment of delivery.

4. An automatic soldering device. A bellows operated by a motor which is inflated at the time of taking the instrument from its place, and which automatically cuts the current off when the instrument is put in its place.

5. Miniature electric oven for the operating table for annealing gold, warming gutta percha dressings and water. (Table Clinic.)

A Method of Bridgework

Dr. N. Penn Bugbee

Springfield, Mass.

Instead of putting a gold cap on both abutment teeth I put the gold cap on the distal; then on the anterior abutment I put in either a gold or alloy filling, or a gold inlay—and allow a clasp gold wire to rest in a groove in the filling, or the gold inlay, thereby prolonging the life of the tooth by allowing the natural movement of the tooth in occlusion. (Table Clinic.)

Anatomical Articulator

Dr. C. De Witt Gritman

714 Perry Building, Philadelphia, Pa.

The correct placing of the casts on the articulator is of great importance. If the casts are not placed on the articulator in their anatomically correct relation, then a very important step in the construction of the denture has been omitted.

ITEMS OF INTEREST

The use of the face bow is to correctly transfer the bite from the patient's mouth to the articulator so that the casts will hold the same position relative to the pivotal points of the articulator that the alveolar border holds to the centers of the temporo-maxillary articulation; then when the articulator is opened it will move on a radius of the same circle that the mandible does.

We aim to imitate the natural teeth in size, shape, shade, arrangement, and their esthetic features. Why not continue to imitate nature by using an articulator that will at least give more than one of the many movements of the mandible?

An articulator that will reproduce a few of the movements of the mandible is of great assistance to those who try to give the patient the greatest of comfort from artificial dentures.

A clear minded thinker has asked, "Would the great Designer of nature have designed an articulation so complicated as the temporo-maxillary articulation is if a plain hinge would have answered as well?"

In the human anatomy, we find only useful movements. After the casts have been correctly placed on the articulator the teeth can be arranged so that when the mandible is moved forward, every tooth will articulate, and when the mandible is moved from side to side there will be at least five points of contact, thus distributing the force of mastication evenly on the surfaces of the curves of occlusion.

The fusing of a full upper and lower denture is a mechanical operation and unless the arrangement of the teeth is based on anatomical as well as mechanical principles the patient will not derive the maximum of comfort from their use. (Table Clinic.)

Pyorrhea Treatment

Dr. C. M. Carr, Kansas City, Mo.

I contend that the mechanical principles on which all cleansing instruments have been constructed, has been faulty, and that it is a physical impossibility to accomplish the results we seek with any such as have been offered. I claim a principle of an instrument operated as a plane, using the tooth which is being worked on as a rest, and it is impossible to make the instrument to take hold or work in any other position. Therefore it is an impossibility to leave anything but a smooth surface, with the use of my improved instruments. In contradistinction it is impossible to leave a smooth and polished surface with any instrument constructed on any other plan. Many dentists have at many times gotten the deposit off and got it all off, of many teeth, but in getting the deposit off with instruments made upon faulty mechanical principles they have left a rough and scratched surface which is not only an irritant of itself

but offers a secure place of lodgment for secondary deposits and within from one to six months' time, as they have always claimed, they had recurrence of pyorrhea, which is exactly what they did have. When a smooth and polished surface is left with no scratches there is no reason why there should be another case of pyorrhea in any less time than it took for the original case, which is from five to twenty years, and the only thing necessary to prevent recurrence of pyorrhea, as I always explain to a patient is, not an ordinary, but a thorough, cleaning once a year.

1. A Removable Wire Bridge

2. An Improved Plain Line Articulator

Dr. Walter W. Crate, Camden, N. J.

My clinic of a removable wire bridge consists principally of a sealed tube of twenty-two karat thirty-gauge gold plate, sealed at the end, about one-third of an inch long with a collar to be dropped to a depth and cemented in the devitalized tooth. This will serve to receive a platinized gold wire pin of corresponding length and gauge which is placed as an abutment to one end of a small bridge. The advantage of this system will be more fully appreciated in those cases where teeth have been lost from one side of the mouth, and it is not desired to make a vulcanized plate with a strip running back to the anterior incisor teeth. The abutment at the other end of this removable wire bridge consists of the usual clasp, and the teeth are preferably held to the apparatus by vulcanite although in many cases I have used the gold backing and solder, as in the usual bridge.

My clinic demonstrates this form of bridge replacing two lost centrals in the upper jaw, a slight clasp clamping over the lateral incisors of the upper jaw, and the tubes and wires described passing by the neck of the lateral tube on the palatal side of the bridge to the basilar portion of the cuspid tooth.

I present another model which demonstrates the replacement of two lower left bicuspid teeth, the only teeth lost from that jaw, and shows a clasp surrounding the molar and the new tube and platinized wire inserted therein passing to the lower left cuspid.

Clinic No. 2, on the subject of an improved plain line articulator, shows the usual plain line articulator with a guide ridge and curved connection placed between the two top plates of the articulator, the said plates being held together by a thumbscrew. This articulator was constructed to enable the laboratory man to set up teeth in accordance with Bonwill's compensatory curve. The demonstration consists of a plaster model of a perfect set of upper and lower teeth fastened to the articulator, the



ITEMS OF INTEREST

superior centrals overlapping anterior centrals as in a normal case. By loosening the thumbscrew and running the top forward flap back, which is permitted by reason of the V-shaped guide ridge and curved connection, three points may be made to touch between the upper and lower model; namely the superior centrals strike the anterior centrals below and the upper first molar buccal cusps on each side strike the buccal cusp of the lower second molar. A plate made after this fashion on this articulator can not come down upon the patient biting on the front teeth as the point on either side of the molars strikes simultaneously with the anterior bite. (Table Clinic.)

Gold Inlays

Dr. Lionel L. Homburger

117 West 79th Street, New York City

I first prepare the cavity in a suitable manner, then I take an impression of the cavity with Prefection modeling composition; then I also take a bite of that side of the mouth, also in modeling composition. Then I dismiss my patient. I prepare my model and articulate it, and I take my impression and set it in Melotte's Moldine and oil the surface of it, and also oil the surface of my metal cup. I put the cup over the impression and I fuse some of the new S. S. White inlay metal. This I pour through the opening in the cup. After it is set I separate and I have my die. On this die I swedge a matrix of twenty-four karat, thirty-six gauge gold. Then I cut a hole in the bottom of the matrix. I remove this matrix and set it in my articulated model and put a piece of soft modeling composition into the matrix and let the plaster teeth bite together. This core I carve up by hand so as to imitate the fissures of the teeth, making an allowance for the gold which I afterward swedge over this. I then set the matrix containing the core into my die, lay a piece of twenty-four karat, thirty-six gauge gold on the same and swedge. I then separate and remove the core and solder the two pieces of gold together with twenty-two karat solder. I then set this inlay into my articulated model and let the teeth come together in order to see if the articulation is correct; if it is not absolutely correct the bite of the plaster teeth together will correct this. I then reverse the inlay and fill in the opening with eighteen karat solder sufficiently to reinforce the biting surface. I then polish the approximal surface and set the inlay into the tooth with cement, and then finish in the mouth. It needs absolutely no grinding for occlusion as the occlusion is perfect.



Orthodontia—Jackson System

Dr. V. H. Jackson

240 Lenox Avenue, New York City

Dr. V. H. Jackson demonstrated his system of correcting irregularities of the teeth. He showed the method of constructing appliances, first describing how to prepare a model. An accurate model is made and the teeth carved slightly at the neck, which causes the appliance, when made, to fit closely, insuring good anchorage.

The appliance consists of partial clasps, spring clasps, base-wire, finger-springs, lugs, etc., assembled on an accurate plaster model on which they are finally soldered. Spring clasp attachments retain the appliance in position by grasping the anchorage teeth. They are made by first arranging partial clasps on the lingual sides of the molars and bicuspsids used for anchorage. The partial clasps are made of pieces of 18 karat gold plate, No. 36 Standard wire gauge, contoured to fit the side of the tooth, usually the lingual side. The gold is roughened on the side where the solder is to be applied.

The spring clasps are of No. 21 or 20 wire, either of gold, silver-nickel, platinoid, or German silver. They are shaped to fit the opposite side of the tooth from the partial-clasps near the gum, with the ends passing over the arch, following closely at the junction of the teeth and resting on the partial-clasps to which they are finally soldered. A large wire known as the base-wire or body of the appliance is shaped to cross the arch following the palatine curve with the ends bent at nearly a right angle forming arms. These arms rest on the partial clasps to which they are soldered with the spring-clasps. To this anchorage portion of the appliance, springs of any form are united with solder. They are shaped to extend like fingers for moving any of the teeth in the arch as desired.

The base-wire crossing the palatine arch is termed a palatine base-wire; when it follows the lingual curve of the teeth a lingual base-wire, and a labio-buccal base-wire when it is arranged to pass on the labial and buccal sides of the teeth in the arch.

The method of soldering with chemically pure tin, using the soldering iron, was described.

Models and apparatus were presented showing the ease with which the arches of the jaws and teeth are equalized with the Jackson appliances and rubber elastics. Models and appliances of numerous cases were presented, showing the conditions before and after regulating, and the extensive movement accomplished in from two to eight visits. (Table Clinic.)



Carving Entire Crown of Porcelain Body

Dr. H. E. Kelsey

Commonwealth Bank Building, Baltimore, Md.

The object of this clinic is not so much to demonstrate any special form of crown as to illustrate how easily porcelain body as it is prepared to-day may be carved into any desired form.

It is as simple to shape up a crown with good occlusion for an irregular case with abnormal bite as it is for a normal one, and it is in such cases that this method is especially valuable, though even in the simple cases it is often quicker than any other method.

The blending of the shades is managed much as it is in porcelain inlays, and the general shade of a carved crown should not give much trouble to any one who makes inlays as they require far greater accuracy of color.

My procedure is to burnish platinum cap thirty-six to forty gauge to end of root, soldering the post in with platinum solder or pure gold, allowing the end to project above the cap one-sixteenth to one-eighth of an inch according to the bite. When post and cap are properly fitted, place the post in a pin-vise for convenience in handling and put a layer of foundation body over top of cap and around post allowing it to extend well out over the edges of cap to compensate for the shrinkage. This foundation body should be the shade desired for the cervical portion of the crown. Upon this base build the regular body to approximate the desired contour and occlusion and finish by carving with suitable grooves. More body may be added if desirable by slightly moistening the mass. Rapid heating must be avoided in the baking of the crown until the moisture is thoroughly dried out of the body. The crown may be ground away or added to and rebaked if the fit is not good after trying in. A more accurate way and one I more often employ is to work from casts. With the cap and post in position take an impression and bite and before pouring cover the post with wax so it may be withdrawn after the plaster has set.

From the approximal surfaces of the teeth on either side of the root to be crowned trim away sufficiently to allow the porcelain to be built out about one-third larger than the crown will be when baked, as the average porcelain shrinks about one-third of its diameter in masses the size of a tooth. Of course the same allowance must be made in the length of the crown; therefore the bite should be opened correspondingly.

By making two sets of models and leaving one untrimmed the crown can be tested for size and occlusion before the patient is seen. (Table Clinic.)



A Method for Repairing Broken Facings

Dr. P. B. McCullough

2211 Spruce Street, Philadelphia, Pa.

Cut pins off, flush with back of facing selected to be used. With a drill smaller than the diameter of the pins cut the latter out, then enlarge the holes to admit the heads of the pins on the backing in the mouth, using a bur with temper drawn with carborundrum in glycerine as the abrasive. After the facing has been ground as may be required to fit the space and backing, it is set with cement. Speed is gained by using a small diamond drill to enlarge the pin holes in the porcelain after the platinum has been cut out. For those who may be successful in dissolving the pins in nitro-hydrochloric acid, the danger of splitting the facing with the drill is avoided.

The Optimus Method of Investing for Making Vulcanite Plate

Dr. H. S. Miller, Rochester, N. Y.

"The Optimus method of investing, for making a vulcanite plate," consists in reversing the order usually employed by dentists, and leaving the cast of mouth and teeth in the lower part of flask, instead of having them draw with the upper part of flask. This method insures a positive articulation, when plate is completed, and obviates the necessity of grinding to restore articulation, owing to the fact of the flask not having been closed exactly as it was when filled with plaster. This method requires a larger flask than those usually employed, and to meet this I have made brass flasks, sufficiently large to flask the largest case that may present. With this method it is immaterial (so far as relative position of the teeth to the cast is concerned), whether the flask is properly closed or not, as the teeth are firmly imbedded in their proper relative position. Furthermore in the use of pink rubber in connection with black or other rubber, the pink remains exactly where placed, and the black can not penetrate it, as it often does in the old method. (Table Clinic.)

Contour Gold Fillings Which Preserve the Interdental Space Without Exaggerating It

Dr. L. H. O'Brian

542 Fifth Avenue, New York City

In our struggle to attain in our dental operations the highest ideals we can easily overdo the matter and produce results which in time prove to be detrimental.

ITEMS OF INTEREST

This is particularly true when after extensive wedging or separating a number of contour fillings exaggerating the normal size of the filled teeth are inserted.

Many of us have seen mouths where extensive operations have been made with an eye to extension for prevention and found that each tooth was apparently elongated, an effect produced by the partial receding of the gums and straightening or stretching of the gum line.

These patients in many instances have suffered from acute sensitiveness of the necks of the teeth and the whole mouth has been put in a state of strain so that the normal articulation produces movements and gradual loosening of the teeth.

Different operators attain ideal contours in different ways. One operator whom I had the pleasure of watching filled out the whole interdental space with gold and then sawed out a wedge-shaped piece leaving the lower portion intact. This man produced the ideal contour but in my estimation did it at great nerve cost to both himself and his patient.

An easier method, for which I claim no originality, enables one to attain the exact contour with the least expenditure of energy.

The cavity being prepared and the rubber dam adjusted, a matrix of such width and shape as one may need is cut from a sheet of thin steel.

Two orange wood sticks triangular in shape are sharpened to points and inserted back of the steel matrix, one being inserted from the palatal and one from the buccal side.

These two sticks pass each other and only sufficient force should be used in meeting them to press the matrix against the cervical margin and hold it there.

Great care must be exercised from beginning to end to thoroughly condense the gold, and when this filling is completed it needs no approximal disking by which many a good contour has been ruined.

The cervical edge can be trimmed with a sharp lance preferably and polished with strips, and the contour is as nature intended it. (Chair Clinic.)

Gilmer's Method of Treating Fracture of the Mandible

Dr. Alice M. Steeves

229 Berkeley Street, Boston, Mass.

Frederick G——— was admitted to the hospital March 16th. On examination some crepitus was found and a fracture at the body of the jaw on the left side between the lateral and cuspid teeth; owing

ITEMS OF INTEREST

to the rotation of the fragments, found a fracture also at the ramus. Owing to condition of swelling it was impossible to diagnose the fracture at the ramus from crepitus, but the rotation proved that there was a detachment, else it would not have rotated. The patient's teeth were perfect and the molars were very close against the angle of the ramus, therefore the question of food had to be considered. Gas was administered and the superior right third molar extracted in order that the patient might take food. The bicuspid and first molar teeth on either side were securely wired together thus securing normal occlusion and using the superior maxilla as a splint for the inferior. Owing to the severity of the trauma the inflammation was six days in subsiding. During that time ice bags to relieve the inflammation were applied, and the patient was fed with appropriate diet. The wires were tightened eight days after the operation and also two weeks later; that was all the change that was made in the dressing or wiring for six weeks, when the wires were removed. As the fracture was through the socket of the cuspid tooth, that naturally being the longest socket in the lower jaw, the cuspid tooth was loose for some time afterward; this was retained in place by a silk ligature, changed at intervals. (Table Clinic.)

Combination Metal and Cement Fillings

Dr. Levi C. Taylor

68 Pratt Street, Hartford, Conn.

We find gold and amalgam are not as good preservers of teeth as desirable. The question has long been before the public how we can best preserve teeth.

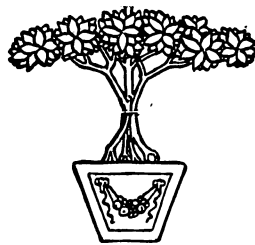
During the last ten years we have been experimenting with the combination of metals and cements, until it seems to be proven beyond question that the combinations when properly made make a much better preserver of the tooth than it is possible to obtain with metals alone.

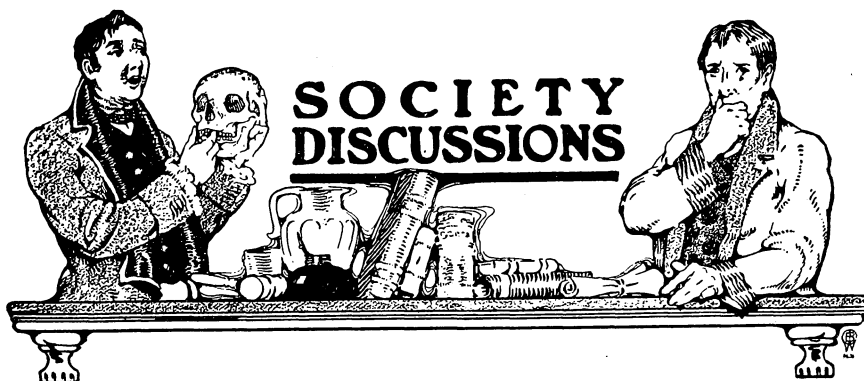
As our clinic shows, heat has much to do with making a hygienic filling. First place a thin cement all over the cavity with the point of a probe—then take some porous gold "Watts Crystal," "Moss Fiber," or "De Trays," and anneal by heating to red heat not less than ten times, and more is better. Place the gold, when hot, upon the cement. Heat your burnishers—two of them—to blueing point, and with one in each hand place them upon the gold, press slowly with both hands, when the heat will suck the cement into the little interstices in the gold, making many little retainers for the filling. Heat more gold and burnish on to this piece until filling is three-fourths made; take paring chisel and trim

ITEMS OF INTEREST

enamel edge, then place next piece of (well annealed) gold foil on center of filling and burnish from center on to the enamel until the filling is ready to finish in ordinary style.

For children—ten years—remove decay only (in front teeth), place a little cement and use one or two pieces of "Watts Crystal" gold, pressing into cement with hot flat burnisher and holding for one or two minutes—wait ten minutes and finish with carborundum strips. Many of these little fillings have been in four or five years with no signs of decay or dislodgment. (Chair Clinic.)





New Jersey State Dental Society.

Discussion of Dr. Irwin's Paper.

Dr. C. S. Stockton. It is as creditable to write history as to make it. and I think the paper an extremely good one. There is one point that I would like to add.

Previous to the organization of this society thirty-six years ago, I wrote letters to a dozen or more gentlemen throughout the State asking them to meet in Newark; I am very sorry that I can not give you the exact date. That meeting was one of consultation to consider the advisability of forming a society, and out of that meeting held at No. 9 Bank Street, Newark, in the Academy of Music as it was called, grew the New Jersey State Dental Society. Of the twenty-seven men who signed the call for that meeting a number were present at the meeting and authorized the gathering at Trenton, where the organization took place. So, if there is any credit due for it, I am entitled to the credit of suggesting, at all events, the New Jersey State Dental Society.

There is another bit of history that should appear in this paper of Dr. Irwin. At the session of this Society held in 1882, a committee was appointed to go to the legislature and procure a law giving authority to the Examining Board to confer the degree of M.D.S. Believing this proposed law to be a very detrimental one to the best interests of dentistry in our State, I opposed it. And alone, against the almost solid combination of the society membership, I defeated the measure. This is the best thing I ever did for this society. The details of the fight and victory are not now necessary to be given.

The name of William H. Atkinson is known to a great many of you. His personality was such that any one reading his works to-day can

ITEMS OF INTEREST

form but little idea of it. He was a man standing about five feet eight high, and weighing about a hundred and ninety-five, long hair and beard; keen eye, strong physique, a strong man in every respect. No man had ever lived who had the command of language that William H. Atkinson had. He was an enthusiast in medicine and dentistry, and he had a way sometimes of really blackguarding dentists for their ignorance so that they became ashamed of themselves. Atkinson did more to make dentists ashamed of their ignorance than any man who has ever lived. He came here to New Jersey, to this society; he was a personal friend of mine as of others, and he never missed a meeting, because he liked us Jerseymen, and sometimes he would soar off so high with such a command of language that you could hardly realize it was an ordinary human being who was talking, and sometimes he said that the angels inspired him.

There were two other men both born in 1844, a fortunate year, whom we had with us; one was Marshall Webb, and the other G. Parmly Brown. Webb, with his enthusiasm for better work killed himself. Brown had more sense and lives to-day to tell the story. There are many other men I might mention; Hayhurst I might mention as man of good theories, he was our second President; Dr. Kingsley, President twice. So I might go on with this list if it were not getting so late, and tell you the characteristics of many of these gentlemen who helped to make this society.

I have only one word to say in closing—you want to be enthusiastic to be the best dentist there is, not to be as good as somebody else, as good as Brown or Webb or Atkinson or Luckey or anybody else, but to be better than they were, and then you want to be enthusiastic that this society shall be the best there is in the whole United States, and then you want to *work* to bring it about. The hairs of some of us are getting gray and we will soon drop out and who will take our place? Some of you young men whose hair is not gray yet are the men we look to to take our places, but you are not going to do it unless you qualify yourself for it, and you must work in order to follow those who have given the best of their lives for this society.

I do not know how we can adequately thank
Dr. Chas. H. Meeker. Dr. Irwin for his work in writing the history of our society. Fortunately I was able to preserve the minutes from the beginning, and when the subject of writing the history of the society was broached to Dr. Irwin he readily fell in with the idea, and I sent him all the data in my possession from the organization of the society to the present day.

Regarding the piece of history that Dr. Stockton referred to, I was among the number that thought the proposed bill a good one. At that

time New York conferred the degree of M.D.S. through its Board of Examiners, and I thought it would be a good thing for us to do so also. I now know that was a mistake, and I am glad the bill did not pass, because, for one thing, it caused me and many others to go to college and get a diploma.

Dr. Byron L. Rhome then read the report of the Committee on Dental Literature, which was received as read.

Report of Committee on Dental Literature.

Before entering into the substance of this report the committee would like to state that their time has been fully occupied in reviewing current dental literature and we certainly feel it complimentary to the profession that we have so many men within our circle whose ability, as writers, is proven by the articles appearing in these various books, but in justice to ourselves and in the interest of truth it must be stated that articles after articles and essays upon essays, on analysis are found to contain matter new in some details and technique, but in substance the same as of old, and while undoubtedly the slight variations in the presentation of a subject may prove in the future of benefit to our profession, it is to be deplored that the deviation is not more marked.

Electrical Destruction of Fillings.

In an article by Dr. C. P. Davis we have a paper containing or setting up the theory that many of the failures in the fillings of the day owing to a continuation of the ravages of decay is not due to the inefficiency of the operator, lack of technique, or the qualities of the material used for filling purposes, so much as to the presence of electrical currents in the mouth, generated by metals of varying oxidizing qualities and an acid fluid, which act upon the various fillings and rob them of their constituent parts, depositing same on adjoining fillings causing the discoloration of the gold fillings and a depletion of the silver in the silver fillings.

Nitrate of Silver a Preventive of Caries.

We are indebted to Dr. W. D. Miller of Berlin, Germany, for experiments involving the use of silver nitrate as a preventive of further progress in caries. It might be said that we are this time dealing with a problem solved, or partly solved, years ago, which is true, but in this experiment the use of nitrate of silver as a preventive has been so well confirmed and substantiated that to many of us it will be a source of gratification. Pieces of ivory were treated with a concentrated aqueous solution of silver nitrate which was allowed to act from a few minutes to twenty-four hours; the pieces were then suspended in

ITEMS OF INTEREST

fermented solution of peptone-sugar-bouillon, or sugar and saliva. After varying periods of time ranging from two to eight days they were taken out and sections were made passing through the point where the nitrate had been applied, and upon microscopic examination a marked protective action on the part of the nitrate was observed.

Human teeth were also treated in a similar manner, the result being recorded as much the same, although not always so pronounced. As a rule the protection offered by the nitrate was more evident when the surface of the dentin had been slightly decalcified. In explanation Dr. Miller contends that it seems to appear that the precipitate of metallic silver in the superficial layers of dentin forms a barrier more or less impermeable to acid.

Mortality Due to Dentition.

With your indulgence the committee would also like the privilege of quoting to you a few passages, dates, and figures in an article on dentition by Louis Ottofy, D.D.S., Manila, P. I., showing terrific mortality: May to October, 1904, inclusive, deaths of Filipinos before completing one month of age—647. The approximate number of deaths during the second and third month probably not due to dental causes, 302. Other causes, 959. Four to twelve months of age due to convulsions, associated with pathological dentition, 1,342. Total number of deaths, 3,250. Excess of births over deaths, 608. Total number of births reported, 3,858.

Dr. Ottofy claims that vaccination increases the suffering incidental to dentition, and Dr. Burchard claims that syphilis and struma accelerate the eruption of the teeth. Dr. Ottofy also claims that the disturbances of dentition, often unrecognized on account of the absence of local symptoms, may be one reason for so large a mortality.

The committee gives you this data with the hope that it may act in a small way as a stimulus to some of our active men in this broad field where the general practitioner and members of our profession are at such variance, and it certainly is to be hoped that there may be at a day nearby such a uniformity of belief and action that the lives of many of these little ones may be spared.

Use of the Blue Light.

An article entitled "The use of the blue light in the reduction of swelling and the alleviation of pain," by Dr. J. C. Watkins, Winston, Salem, North Carolina, may be of interest to you.

The contrivance is a simple 16-candle power blue electric light globe arranged in a funnel shaped tin shield which, at its mouth, is about four inches in diameter; this is extended about four inches and has at its end a round blue glass and convex lens. The round blue glass is used to

disseminate the blue rays so that the patient may not know the simplicity of the apparatus, and I attribute no especial virtue to the lens. Dr. Watkins claims that in cases of acute abscess, impacted third molars and their associated lesions he has used this blue light with great effect, relieving the pain and causing the disappearance of the inflammatory condition usually attending this form of disease.

Consils. Dr. N. H. Dawbarn, M.D., in an article entitled "Tonsils True and False," has given us the following facts; many of the children suffering from this pathological condition have very high arches. The bad results following pharyngeal lymphoids or lymphoid growths are four: The high narrow arch of the palate, inefficient development of the upper jaw, the dentition imperfect in quality, or irregular in order, and the tendency to decay, especially of those teeth nearest such growth.

Degeneracy and Caries. Dr. Eugene S. Talbot, Chicago, Ill., in his paper "Developmental Pathology, Decay," comes to this conclusion. Few dentists have had proper analytic training. A broader education is necessary to practice stomatology successfully in the future.

Pathology of the head, face, jaws, and teeth must be studied along broader lines. In the evolution of man the face, jaws, and teeth are sacrificed for the benefit of the brain; degeneracy or suppressive evolution, as Thompson calls it, is a part of developmental pathology which exerts beneficial or malign influence according as it attacks a lower structure for the benefit of the higher, or sacrifices the higher to the lower. It may sacrifice brain potentialities to the jaws and jowl as in the ape, or vice versa, as in higher man. The teeth decay more rapidly in pregnancy and constitutional diseases, especially in those cases where the nervous system is involved. The teeth of primitive races decay, but the starting point is always where the enamel is defective. Decay of the teeth is commoner in arrested jaws than in those that are well developed. Decay is commoner in the upper jaw than in the lower jaw, and tooth degeneration under the law of economy of growth whereby a structure is lost for the benefit of the organism as a whole is the greatest determining cause of tooth decay. Without it, lactic acid ferment would rarely act, if at all. Lactic acid ferment is an existing cause of tooth decay in man's evolution.

Rise in evolution means increased control by the central nervous system of local nerves, whether of growth, sensation, or motion, so that explosive performances do not occur as in lower types. Disuse by the local nerves of function results in lessened nutrition. The jaws and teeth being variable structures are most affected by control of local trophic

ITEMS OF INTEREST

sensory or motor nerves since it is unstable, variable structures in which explosive excess is most apt to occur.

Moss Fiber Gold.

Dr. W. F. Johnson of Bangor, Maine, claims that gold moss fiber may be prepared by annealing to a cherry red, then plunging quickly into absolute alcohol after which it is dropped in pure water. He says that gold prepared in this manner can be utilized in filling cavities below the gingival line, and as I understand the article perfect cohesion can be had and a good filling may be so placed even though immersed in liquid.

New Books.

In the last year we have had comparatively few books written; among the most important, the "American Text Book of Operative Dentistry" may be placed. This book is edited by Edw. C. Kirk, D.D.S., Sc.D., professor of clinical dentistry, University of Pennsylvania. The third edition revised and enlarged, illustrated with 875 engravings, Philadelphia and New York, Lee Bros., 1905. Also a text book on "Physiology, Normal and Pathological," for students and practitioners of medicine, by Winfield S. Hall, Ph.D., Leipsic, professor of physiology, Northwestern Medical School, Chicago, Ill., etc. Second edition revised and enlarged with 340 engravings and three colored plates, Philadelphia and New York, Lee Bros. Co.

In the last few days I received by mail a small book entitled "The Teeth and Their Care," by Thaddeus P. Hyatt, D.D.S., Brooklyn, N. Y., King Press.

For some time past the chairman of the committee has felt that a small book explaining the relation of teeth to health and their association with the various diseases, written in a plain and readable fashion, would be a book which many of us would be very happy indeed in recommending to our patients, for nothing to-day is so necessary as the education of the public in general in recognizing the necessity of having their teeth thoroughly taken care of from time to time, and this small book seemingly covers the field beautifully, and we would strongly advise placing many of these books in the hands of the public, feeling sure that there would be mutual benefit received therefrom, all of which is respectfully submitted.

BYRON L. RHOME, *Chairman.*

SOCIETY DISCUSSIONS

Friday, July 20, 1906.

President Duffield called the meeting to order.

There being a quorum present the calling of the roll on motion was dispensed with.

The committee on materia medica presented the following report which was on motion accepted.

Report of Committee on Materia Medica.

The Materia Medica Committee of the New Jersey State Dental Society would submit for your consideration the following report on the new medicaments coming under our observation during the past year. As cleanliness is next to godliness we would first mention medicated soap.

Esterine Dermatic Soap. A medicated product containing 2 1-2 per cent. of antiseptic medication, making, in connection with its antiseptic qualities, a very pleasant and agreeable toilet article.

Eignol Soap. An antiseptic medicinal soap, efficacious in cleansing the teeth, also useful in all forms of rough, scaly, or chapped hands.

Celloidin. Is acid-free and dissolves in alcohol or ether (it is readily soluble in equal parts of both) to a clear, transparent collodion without any sediment. It is non-explosive and the following formula makes an excellent covering for the hands as a substitute for rubber gloves. Celloidin 1 oz., alcohol (96 per cent.) 5 ozs., ether 5 ozs., castor oil (to render the film elastic and flexible) 1-4 to 1-2 oz.

Pebeco. An aromatic chlorate of potash tooth paste, consisting of precipitated chalk, florentine orris root, glycerine, essential oils and 50 per cent. of chlorate of potash. It exerts a tonic influence on the gum tissue by exciting circulation and thus inducing better nutrition. Being a neutral salt it does not attack the dental substance. In the concentrated form in which potash is present in pebeco it either destroys the bacteria of the mouth directly or immediately arrests or retards their growth. It is particularly efficacious in cases of tender, softened, or bleeding gums, and in mercurial stomatitis and is an efficient prophylactic.

Orocid. A mild and agreeable antiseptic mouth wash, containing: menthol, thymol, eucalyptol, formaldehyde, soda bicarbonate, oil of wintergreen, oil of peppermint, and magnesia carbonate.

ITEMS OF INTEREST

Eythol.

An antiseptic and germicide, containing: thymol, eucalyptol and gaultheria together with borates. It is a refreshing and pungent wash for the oral cavity.

Euzone.

An alkaline, antiphlogistic, antiseptic, and germicidal liquid of a pale orange color, containing: lignol, eucalyptol, thymol, menthol, glycerine, soda bicarbonate, soda benzoate, oil wintergreen, and oil peppermint, making an antiseptic mouth wash also useful after extraction of teeth.

Arnicine.

An alkaline mild astringent, non-toxic, non-irritant, antiseptic, and germicidal fluid containing the essential antiseptic constituents of menthol, thymol, eucalyptol combined with sodiums bicarbonate, calcilate and borate, acetanilid, borax, glycerine, arnica, camphor, oil wintergreen, and alcohol; used as a throat, mouth, and nasal douche.

Is composed of: Cow's milk 50 per cent., malted **Wampole's Milk Food.** barley 25 per cent., whole wheat flour 10 per cent., inner cortex of wheat 5 per cent., lecithin 1 per cent.

This food dissolved in water furnishes a concentrated liquid nourishment that contains all elements, fats, proteids, carbohydrates and salts needed to nourish the human body, containing in addition to licithin an abundance of phosphatic salts essential to bone and tooth formation. It is rich also in phosphates derived from whole wheat grain, a property which makes it a superior food for babies cutting teeth and for infants whose bones and nerve tissues are rapidly developing.

Argyrol **(Silver Vitettin).**

Is produced from a proteid derived from wheat which is combined with silver. It occurs in dark brown flocculent crystals, which contain 30 per cent. of silver. It is freely soluble in water in all proportions, forming stable solutions. It does not coagulate albumen nor precipitate chlorides, therefore it is non-escharotic. It is useful in pyorrhea aveolaris, aveolar abscess, periostitis of alveolar border, osteomyelitis, stomatitis, and in the antrum of Highmore.

Caprennaline.

The active principle of the suprarenal capsule is a powerful hemostatic, vaso-motor stimulant and an aid in an emergency. The lessening of pain through the action of caprennaline is doubtless caused by its modifying the sensibility of the terminations of the peripheral nerves to impressions exciting pain. In this respect it resembles cocaine, and the two together form an excellent combination. Caprennaline not only contributes to the analgesic effects of cocaine, but by contracting the capillaries and retarding the absorption of cocaine into the general circulation, materially prolongs its action. These combined effects are very useful in local operations.

The effect of caprennalin lasts approximately for a quarter of an hour and the blanching of the mucous membrane is achieved in from ten to sixty seconds. Further control over the blood supply of membranes may be obtained by frequent instillations. Caprennalin is a valuable adjunct to such drugs as pilocarpine, eserine, atropine, eucaine, acetanilid, etc.

Glykaolin. Has been designed, as the name indicates, for the purpose of utilizing in convenient form valuable therapeutic properties of its constituents. It is a compound of aluminum silicate, salol and glycerine. Oxidation or the decomposition of glykaolin into irritating products is a chemical impossibility. The therapeutic properties may be considered under three heads: When aluminum silicate is brought into contact with serous, purulent and sanguineous deposits, the result of inflammatory processes, absorption begins at once, leaving the affected part free for the operation of the resolvent hygroscopic, emollient, and antiseptic properties of glycerine and the alterative, prophylactic, antiseptic and anodyne properties of the salol. It will be found of inestimable value in the treatment of open wounds and ulcers, and relief is quickly noted in deeper seated affections, such as periostitis and synovitis and those minor annoying troubles such as burns, sunburn, bites, or stings of insects, with which we so often come in contact. Glykaolin can be removed from the most tender tissue by the application of water.

Pyrenol. Occurs as a white, crystalline, slightly hygroscopic powder of aromatic odor; has a sweetish and somewhat prickling taste; is soluble in five parts of water and ten of alcohol; and is a combination of salicylic acid, benzoic acid, and thymol with a sodium salt. From a report of Dr. Fritz Loeb of Berlin, it is claimed to be free from the toxicity of acetanilid mixtures so commonly employed. After many experiments no pathological change that could by any possibility be due to the drug was found, from 1 to 5 grams (15 to 75 grains) daily were administered to three healthy men for several successive days, 15 grams (1-2 oz.) within three days being the maximum. Their general condition, pulse respiration, and gastro-intestinal functions were in no way influenced, save for a moderate and transitory diaphoresis at times. Blood pressure and pulse quality showed little change and especially was never dicrotic. It is therefore claimed that pyrenol has absolutely no bad effect on the heart. In tests of absorption of the medication the urine was examined every ten minutes during the first half hour, then half hourly to the sixth hour, and every two hours thereafter. Twenty minutes after ingestion there was salicylic acid in the urine. The reaction increased during the first three-quarters of an hour, remained stationary for six hours, then gradually diminished

ITEMS OF INTEREST

and in ten hours was gone. The antipyretic action was investigated with patients in hospitals and private practice, which showed that the antipyresis was mild, not accompanied by much sweating and without any unpleasant by or after effects. The tests proved it to be a valued preparation as an analgesic. When violent neuralgias cease half an hour after taking a remedy it is without question of value. Relief is also obtained in alveolar abscesses. The dosage is from 15 to 30 grains once or twice daily.

Solidified Formaldehyde.

While not a new medicament within the past year, has not to our knowledge been reported. This is produced by heating the aqueous solution in a sandbath with sufficient heat to form a gas, which instead of evaporating, becomes polymerized as soon as the concentration exceeds 40 per cent., increasing in density until solid, which when placed in the pulp chamber coming in contact with the heat and moisture of the tooth liberates formaldehyde gas which has almost entirely lost its caustic properties. Having been sealed in the cavity it finds its way to all portions of the root canal producing thorough sterilization.

Sulpho-Lythin.

The sulpho-phosphite of sodium and lithium is a granular non-effervescent salt, a new chemical product which is a true hepatic stimulant and intestinal antizymotic and toxine eliminant. It counteracts acid conditions by removing the cause which is an acetous fermentation in the intestines. It also acts moderately on the kidneys and the skin. Its action upon the liver is through the upper intestinal tract, stimulating increased activity to hepatic cells and discharge of fresh bile through the bile duct. This product has proven particularly efficacious in offsetting pyorrhea alveolaris and erosions, due to excess of uratic salts in the blood. The action of sulpho-lythin is much like that attributed to calomel, but it exerts no injurious action, even under continuous administration, and it does not interfere with digestion if taken when the stomach is free of food and no food is taken until sufficient time is allowed for it to pass out of the stomach.

Thymox.

A non-toxic anodyne preparation. An effective antiseptic, disinfectant, bactericide, prophylactic, deodorant, and styptic, containing hydrogen dioxide with thymol, menthol and eucalyptol in a standard solution, the coppery taste of peroxide being entirely eliminated. In itself a non-toxic, oxidizing preparation it is useful where formerly carbolic acid, creosote, bichloride, nitrate of silver, and zinc chloride have been indicated. Thymox in its decomposition sets free nascent oxygen and destroys organisms heretofore inaccessible.

SOCIETY DISCUSSIONS

Anaecologen. Though mentioned by an essayist last year before this society, it was not included in the *Materia Medica* report, and we think justly should be placed upon the list of new medicaments.

We would suggest that the members of this society take a more active interest in this subject, reporting to the committee all new medicaments with the therapeutic effect obtained by them. Such help on the part of the members would be of inestimable value to the committee in making up a report of this character. Of over 200 letters sent out to the members the number of responses received would not be sufficient reason for the postman to expect an assistant to be placed on his route.

Respectfully submitted,

WILLIAM H. GELSTON, *Chairman.*

Report of Clinical Conference Committee.

The Clinical Conference Committee submits the following report of surgical cases presented:

Case No. 1.

Fannie G. aged six. Presented by Dr. G. A. Hull, for examination and advice.

History.

Last May the patient was admitted to hospital suffering from alveolar abscess due to devitalized pulp in left lower, second temporary molar. Face considerably swollen.

Treatment.

Tooth extracted, gum lanced and sac drained. Some weeks later, a second operation consisting of extracting the first molar and making an extensive incision along the jaw to the ramus was done; ramus found necrosed; the bone was scraped, the wound treated by gauze packings and douches. Pus, however, continued to flow.

Examination..

Swelling on the left side of the face the size of a man's fist. Deep fluctuation. Child pale. Lower left temporary molars absent.. No sign of sixth year molar. Small opening in gum near ascending ramus which allowed a free flow of pus. Probing showed that the periosteum, on the surface of the jaw, extending from the location of the first molar to the angle and almost to the articulation, was denuded. The underlying bone

ITEMS OF INTEREST

was necrosed. Owing to the timidity of child no attempt was made to locate sixth year molar which had not erupted. A diagnosis of necrosis was made.

Advice.

Make free incision along the surface, from location of second molar, well up the ramus. Remove all diseased bone and granulations, pack the wound so as to promote granulations from the bottom and keep it freely open until there is no sign of disease. Prognosis good. If swelling of face should not subside within a couple of months following healing of wound, Dr. Curtis suggested opening the mucous membrane and dissecting away sufficient cellular tissue to reduce the enlargement of the cheek. Pressure over the cheek may be necessary in order that the cavity, caused by the removal of the cellular tissue, may be reduced to the minimum, the healing process facilitated and the contour of the face restored.

Case No. 2.

Mr. W., aged 35. Presented by G. Lenox Curtis, M.D., of New York.

History.

Pulpitis in left lower wisdom tooth. For several months the patient applied cotton saturated with spirits camphor. The gum and cheek finally became sore. Last January a surgeon diagnosed the case to be epithelioma. Microscope verified diagnosis. Case referred to Dr. Curtis two months ago. The face was much swollen. Breath most offensive. All the inside of the cheek, tonsil and soft tissue from symphysis to ramus was one mass of epithelial growth. The entire external surface of the bone of this side was also diseased. The case is now under treatment and is apparently about half healed. Breath sweet. The treatment consists of injection of medicine which cuts off the circulation in the tumor. It is practically bloodless. Dr. Curtis reported that he had successfully treated several cases by this method, and would report the result and the medicine used after he had conclusively demonstrated its efficacy.

There was a distinct line of demarcation between the diseased and healthy parts, much of the growth having come away. The roots of the teeth on this side were fully exposed, the tonsil and the gingival surface of the gum exhibited no signs of the disease. There was a large opening in the face, extending almost to the angle of the mouth.

The bone was brown and the external part was scaling off. With the exception of one place, the size of a fig, near the submaxillary gland, the parts looked healthy.

The case was demonstrated to show what Dr. Curtis hopes will prove to be a more thorough method of treating such cases than that of the usual method of excision.

Case No. 3.

Miss R., aged 14. Presented by G. Lenox Curtis, M.D., of New York. Seventeen months ago she had a local anesthetic injected into the gums and the right lower second molar extracted. Intense pain immediately followed the injection, but the tooth was extracted without pain. A few minutes later the skin over the mental foramen the size of a fifty-cent piece turned black. The pain and the ecchymosis continued to increase. As soon as the patient returned home the family physician took charge of the case. The jaw soon became rigid and the face swelled. The following day the jaws were locked and the head was badly swollen. Pus flowed freely from the mouth.

A few days later all of the teeth on the right side of the lower jaw were loose and painful to the touch. The case was diagnosed as septicemia due to infection, and for months the patient's life was despaired of. Five months after the extraction the case was referred to Dr. Curtis for operation. He found that all of the teeth on the lower jaw were loose and those to the right of the left cuspid were very loose. The second bicuspid was held only by the attachment of the periosteum on the lingual surface. The tooth could be projected forward to a horizontal position. All the gum and much of the alveolar process on the external surface of the jaw, extending from the ramus forward to the right cuspid had sloughed away, leaving the roots of the teeth fully exposed. The bone beneath the gum from the right cuspid to the left second molar external to the teeth had also sloughed away, and the gum was ulcerated and badly diseased. When the gum was incised the roots of all the oral teeth were found entirely denuded of bone and the pulps dead.

The operation consisted of first ligating the teeth firmly in position and then burring and curretting away the diseased bone and pus granulations throughout the entire area of the disease and packing the wound with gauze. During the operation the germ of the right wisdom tooth was uncovered and has since fully developed.

Some months later the canals of the teeth were cleaned and filled, and all the roots, except those of the first molar, were amputated at about 1-8 of an inch from their apex. Amputation was necessary because they were decayed from the exposure incident to long continued treatment. The teeth have become firmly attached and restored to usefulness by reason of the reproduction of the alveolar process and gum tissue. This



case is doubtless a phenomenal one, but it shows conclusively the value of conservative energy. Much credit was accorded to Dr. Curtis for the successful treatment of this case.

Case No. 4.

Dr. M. presented himself for operation upon a large carbuncle on the back of his neck. Dr. Curtis operated under cocaine anesthesia taking the opportunity to demonstrate the efficacy of volasem as an antidote to cocaine. He first administered 20 drops of volasem by mouth, and after the lapse of one minute injected a dram of a saturated solution of cocaine in and about the carbuncle. Two minutes later he opened the carbuncle and vigorously scraped out its contents and the sac. This required about two minutes of rapid work. The wound was then packed tightly with iodoform gauze. There was not the slightest untoward symptoms from the effect of the cocaine injection nor the least manifestation of pus.

A subsequent report of this case was to the effect that the wound healed within ten days without showing more than one-fourth of an inch of a scar.

J. G. HALSEY, *Chairman.*

Report of the Committee on Oral Hygiene in Public Schools.¹

In October, 1905, I received some stationery on which were printed the names of the committee on the Care of Children's Teeth in the Public Schools, consisting of four members, Drs. A. Irwin of Camden, Fred Burdge of Asbury Park, W. D. Rice of New Brunswick, and W. E. Stelle of Plainfield, as chairman.

This was the first I knew of such a committee, and that I was chairman of same. A meeting was called to take place at Newark at the November meeting of the C. D. A. There being no meeting of the society that month it was postponed until the meeting of the following month, at which three members were present. It was decided to have a member appointed for each county in the State.

The chairman sent a letter and a circular letter to each member of the increased committee requesting him to get himself or some other reputable dentist of his town appointed examiner of the children's teeth in the public schools of his city and make a report. Dr. A. S. Bailey of Lakewood reported that he had succeeded in getting himself appointed examiner and had enlisted Drs. Crook and Boble of Toms River to look after the schools in their district, and returned filled out blanks. Dr.

SOCIETY DISCUSSIONS

Fred Burdge of Asbury Park made strenuous efforts to get oral hygiene introduced in his town, but did not meet with success. Dr. M. R. Brinkman of Hackensack stated he presented the subject to the Hackensack board of education, and the board directed the president to choose four local dentists as examiners and assign them various schools. Dr. S. C. Slade of Vineland informed me he made application to the board of education to have Dr. Sarah Jackson appointed examiner of the children's teeth in the public schools of his town and after much discussion by the board it was tabled. Dr. A. Irwin reported that he succeeded in having Dr. W. H. Gelston appointed examiner in the public schools of Camden. Your chairman presented the subject to the board of education in Plainfield, which resulted in having Dr. Chas. G. Davis, Dr. O. Whitford and himself appointed examiners. After some delay we made examinations at four different periods, examining 253 pupils, getting the work well started, and in hope at the opening of next year's school term to proceed more systematically and do more good work. Of the 253 children examined 194 had tooth brushes, 59 none. 161 used them daily, 33 occasionally. In about 72 per cent. of this number, their teeth required cleaning. 94 per cent. their first permanent molars needed filling, 3 per cent. regulating, 2 per cent. had pitted teeth; 50 per cent. had visited dentists, 50 per cent. had not. 27 per cent. had teeth requiring extraction. None had hare lip nor cleft palate. All readily submitted to having their teeth examined with the exception of three, who after seeing the others examined made no objections. I think a great deal of good can be accomplished in oral hygiene in the public schools, first by getting the pupil interested in his or her teeth; second by calling the parents' attention to the necessity of having the work done and if sent to the dentist (as quite a large percentage will be) saving a great many teeth, particularly the first molars, from having the pulps devitalized by having them filled before decay reaches that point.

We have done this work free of charge, and this is the only way to get oral hygiene introduced in the public schools. Later on compensation will follow, and undoubtedly a stated salary will be given the dental examiner, as now given the medical. We found the children neatly clad, clean hands and faces, but a large percentage with decayed and dirty teeth which only proves the necessity for this work. We hope that all the members of this committee will at an early date get oral hygiene introduced in the public schools of their towns and eventually it will be established in all the schools of New Jersey.

W. E. STEELE, *Chairman.*

ITEMS OF INTEREST

The treasurer then presented his report. On motion the report was referred to an auditing committee consisting of Drs. Brinkman and Wolsey, which subsequently reported the treasurer's account as accurate.

The treasurer's report, etc., is as follows:

July 20, 1906.

To the Officers and Members of the New Jersey State Dental Society:

Your treasurer presents the following report:

Balance on hand July 1, 1905.....	\$999.97
Received from Membership Committee.....	56.00
Received from Dr. J. E. Duffield.....	683.54
Received from dues	337.00

\$2,076.51

Moneys paid out as per vouchers 1,308.27

Balance in hand\$ 768.24

*Approved and found correct.

M. R. BRINKMAN,

W. WOLSEY.

The Membership Committee reported the following applications for membership:

Dr. Louis M. Heckman, Jamesburg, N. J. Sponsors, Drs. Truex and Hindel.

Dr. Archibald E. Boice, Trenton, N. J. Sponsors, Drs. Chase, Ginnelly, and Heazelton.

Dr. Bertram F. Holden, Passaic, N. J. Sponsors, Drs. Luckey and Pruden.

Dr. Wentworth Holmes, Newark, N. J. Sponsors, Drs. Meeker, Woolsey, and Sutphen.

Dr. Francis Woodruff, Newark, N. J. Sponsors, Drs. Jacquith, Halsey, and Brinkman.

Dr. Albert B. Osmun, Morristown, N. J. Sponsors, Drs. Pruden, Rood, and Brinkman.

Dr. Arthur Watson Barber, East Orange, N. J. Sponsors, Drs. Adams, Eaton and Baker.

Dr. Carl Ferrel, Elizabeth, N. J. Sponsors, Drs. Woolsey and Brinkman.

A ballot being taken the above named gentlemen were unanimously elected to membership.

SOCIETY DISCUSSIONS

On motion the society then proceeded to the election of officers for the ensuing year, which resulted as follows

President, Dr. M. R. Brinkman, Hackensack, N. J.; Vice-President, Dr. Walter Woolsey, Elizabeth, N. J.; Secretary, Dr. Charles A. Meeker, Newark, N. J.; Asst. Secretary, Dr. H. S. Sutphen, Newark, N. J.

Executive Committee—Drs. W. A. Jaquette, Dilts, Iredell, and Gregory.

Membership Committee.—Drs. Rhome, Naylor, Tuttle, Thompson, and Hazelton.

For Recommendation to the Governor for Appointment on the State Board of Examiners.—Dr. W. T. Truex.

On motion a vote of thanks was extended to Senator Bradley for the use of the Auditorium, to the Chief of Police of Asbury Park, and to the Essayists and Clinicians.

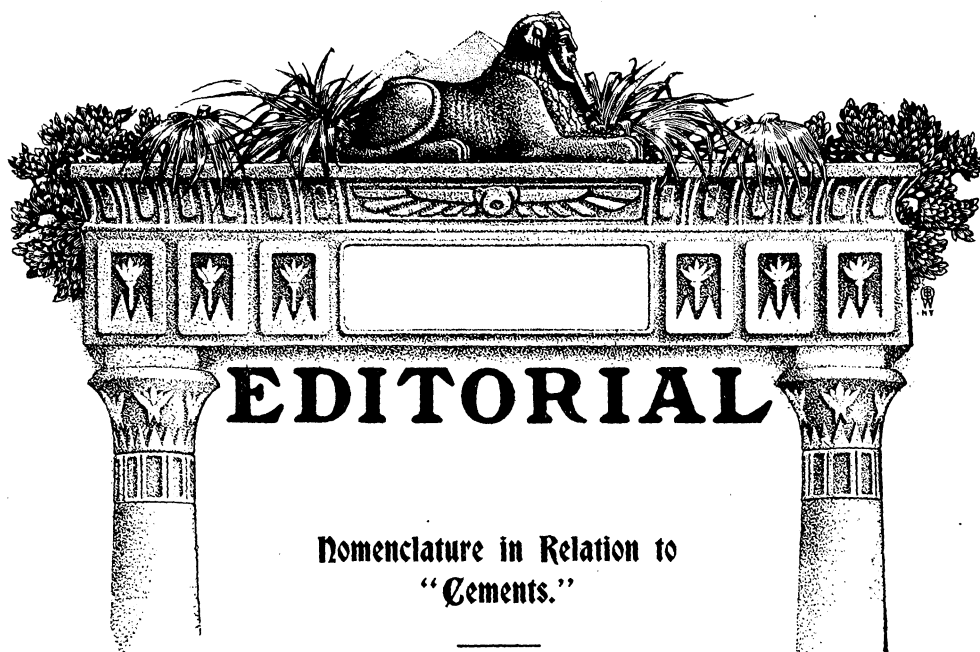
President Brinkman then announced the appointment of the following legislative committee: Drs. Dilts, Duffield, Ginnelly, Naylor, Adams, Halsey, and Burdge.

Also as chairman of the essay committee, Dr. Jaquette.

Also of Dr. Dilts as chairman of the clinic committee.

On motion adjourned sine die.





Nomenclature in Relation to "Cements."

In the evolution, or revolution, now occurring in regard to our methods of filling teeth, a coincidental revolution is taking place in relation to a miscellaneous lot of products, totally unlike in many respects, yet which are all grouped under the general term "cements."

To meet the first demand for a filling material, plastic in its nature, and resembling the tooth in color, dentists were supplied with "bone filling," otherwise known as "os artificial." The oxy-chloride of zinc held sway for many years, but were finally supplanted by the oxy-phosphate of zinc. But whether a chloride or a phosphate, the materials were marketed for the avowed purpose of filling teeth.

The First Demand for Cement.

With the appearance of the shell and the Richmond crowns, a cementing medium became needful, and it was natural that the dentist should utilize the well known "sticky" property of the oxy-phosphate which he found at hand in his cabinet. Thenceforth men spoke of cementing crowns and bridges, and thus what had been a filling material became widely known as a "cement," and the contents of a single package served the double purpose.



**Difference
Between Cement
and Filling.**

But there is a wide difference between the requisites of a filling material and what we should use for cementation. A plastic filling material should set somewhat slowly, and should not liberate much heat in this chemical action; it should become densely hard and take a fine polish; it may be used mixed to a thick consistency, and usually may be protected from moisture while hardening. It should approximate the color of the tooth for visible cavities, but may be darker, or carry a powdered metal for other localities, and for temporary teeth.

Cements very shortly will be divided into two classes: those for cementing porcelains, and those for cementing metals to tooth substances. The primary need in a cement must be that it may be used quite thin, and yet retain in position the cemented substance. It would also be very advantageous if a cement could be used regardless of moisture.

In view of the very unlike uses to which the materials are to be put, would it not be well henceforth to discriminate between cements and filling materials? Would it not be better to denominate the cements as "cements" with some designating term which would indicate its special properties, while at the same time calling all the filling materials plastics?

Among the latter we would have the oxy-phosphate filling, the artificial enamels, the oxy-chloride of copper, and the phosphates which carry tin fillings, as well perhaps as the oxy-chloride of zinc still used by some in root canals.

**Transparent
Cement.**

Among the cements we should have hydraulic cements for crown and bridge cementation; porcelain inlay cement, and gold inlay cement. Between the latter there is a marked difference in requirements. Practically all porcelain inlays are made within a matrix, and therefore fail to accurately fill the tooth cavity to the extent of the thickness of the matrix which is removed. Thus room is provided for a cement made of a granular powder. Nevertheless there has always been a feeling that a transparent, liquid cement for porcelain inlays is a desideratum.

Such a cement is at present in the hands of a few porcelain workers for experimentation. A new principle seems to have been utilized. There are two liquids, the cavity being coated with one and the inlay with the

ITEMS OF INTEREST

other. When brought together almost instant cementation takes place. It is claimed that this cement resists lactic acid.

With gold inlays the situation is quite different.

Special Gold Inlay Cement.

Whether the inlay be cast or made in a matrix, if the work be accurately done, the fit should be absolute, or nearly so. There is practically no space for cement. We require, therefore, a cement which should flow very readily under pressure. One has just been presented to a few gold inlay workers, of which it is claimed that "it works as smoothly as though it were an oil paint." Again it is evident that the color problem, so troublesome with the porcelain inlay, reaches the minimum of importance when cementing gold.

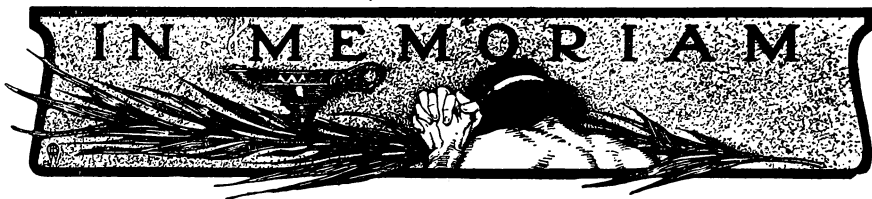
The signs of the times are that the cement problem will soon be solved; therefore in future we should alter our terminology so as to discriminate between cements and filling materials.

Correction.

Dr. J. E. Hinkins writes as follows:

"On reading over my article I find two mistakes. Will you make the following corrections in the next issue. On page 197 you have spelled propionate "proportionate," and on page 214 the equation should be $\text{Ca}_3(\text{PO}_4)_2 + 12 \text{HC}_3\text{H}_5\text{O}_3 = 2 \text{H}_3\text{PO}_4 + 3 (\text{Ca C}_3\text{H}_5\text{O}_3)_2 + 2 \text{HC}_3\text{H}_5\text{O}_3$."





Dr. G. Arthur Roberts.

Died, April 14, 1907, at his home in Toronto, Canada, G. Arthur Roberts, in his thirty-fourth year.

By the death of Dr. Roberts the dental profession of Ontario loses one of its brightest and most capable members. Although not enjoying good health for some months past his sudden demise came as a great shock to his many friends and associates. He graduated from Philadelphia in '96 and from Toronto in '97. He gave up general practice in June, 1904, since which time he had devoted his efforts exclusively to orthodontia, being the first dentist in Canada to limit his practice to this specialty, and at the time of his death had associated with him Dr. Guy G. Hume. He was examiner in orthodontia for the Royal College of Dental Surgeons and for the Dominion Dental Council.

Dr. William N. Tuller.

Dr. William Newton Tuller, 24 years old, son of Dr. R. B. Tuller, 100 State Street, died on Wednesday at Carlsbad, N. M., from typhoid fever contracted as he was recovering from an operation for appendicitis. He had gone west a year ago on account of ill health. He was born and educated in Chicago and was a graduate of the Chicago College of Dental Surgeons, of which institution his father has been a member of the faculty for ten years.



SOCIETY ANNOUNCEMENTS

National Society Meetings.

National Association of Dental Examiners,
Minneapolis, Minn., July 26, 27, 28.

National Dental Association, Minneapolis,
Minn., July 30.

Jamestown Dental Convention, Norfolk, Va.,
Sept. 10, 11, 12.

American Society of Orthodontists, Detroit, Mich., Oct. 2, 3, 4.

State Society Meetings.

Colorado State Dental Society, Colorado Springs, June 20, 21, 22.

Florida State Dental Society, Atlantic Beach, June 6, 7, 8.

Indiana State Dental Association, Indianapolis, June 11, 12, 13.

Maine Dental Society, July 16.

Minnesota State Dental Association, Minneapolis, July 30, Aug. 3.

Missouri State Dental Association, Kansas City, Mo., June 4, 5, 6.

New Jersey State Dental Society, Asbury Park, July 17, 18, 19.

South Carolina State Dental Association, Anderson.

South Dakota Dental Society, Sioux Falls, June 4, 5, 6.

Tennessee State Dental Association, Knoxville, July 9, 10, 11.

Texas State Dental Association, San Antonio, June 13, 14, 15.

University of Pennsylvania Dental Alumni Society, Philadelphia, Pa.,
June 15, 17, 18.

Virginia State Dental Association, Jamestown, Sept. 10, 11, 12.

Wisconsin State Dental Society, La Crosse, July 16, 17, 18.



National Dental Association Convention.

The Plaza Hotel has been secured as headquarters for the coming National Dental Association Convention which meets in Minneapolis, July 30-August 2, and is situated one-half block from where the clinics will be held. Rates, \$2.00 per day and upward. European plan. Rates at other hotels are as follows:

The West Hotel, \$1.00 per day and upward. European plan.

The Nicollet Hotel, \$1.00 per day and upward. European plan.

The Majestic Hotel, \$1.00 per day. European plan.

F. E. COBB, Secretary.

Masonic Temple, Minneapolis, Minn.

Ohio State Board of Dental Examiners.

The regular semi-annual meeting of the Board of Dental Examiners of the State of Ohio will be held in Columbus, June 25, 26 and 27, 1907.

Only graduates are eligible to examination.

Application, accompanied by fee (\$20.00), should be filed with the secretary by June 15th. For further information address

H. C. BROWN, Secretary.

185 East State Street, Columbus, Ohio.

Tennessee State Board of Dental Examiners.

The Tennessee dental law has been recently so amended, as to require all applicants for registration to be graduates of reputable dental colleges, and they must also pass a written examination by the State Board and give a practical demonstration of proficiency in operative and prosthetic dentistry. Examination fee, \$10.00. With the other important amendments made at the same time, the Tennessee dental law is now on a par with the dental laws of other States.

F. A. SHOTWELL, Secretary.

Rogersville, Tenn.



National Dental Association, Section 1.

The following papers have been secured for Section I of the National Dental Association, for the Minneapolis meeting beginning July 30.

1. "The Over-Arch-Bar in Bridgework,"

Dr. L. C. Bryan, Basel, Switzerland.

2. "Some Practical Experiences Theoretically Expressed,"

Dr. Emory A. Bryant, Washington, D. C.

3. "Treatment of Malocclusion of the Deciduous Teeth."

Dr. Guilhelmena P. Mendel, Minneapolis, Minn.

4. "Evolution".....Dr. Charles L. Hungerford, Kansas City, Mo.

5. "The Effect of Excess of Mercury upon Shrinkage, Expansion, Edge-strength, Flow, Change in Composition and Stability of the Dental Amalgam Alloys".....Dr. Marcus L. Ward, Detroit, Mich.

6. "Porcelain".....Dr. C. M. Work, Ottumwa, Iowa.

7. "Physical Condition of or Pertaining to the Human Teeth,"

Dr. F. G. Corey, Council Grove, Kansas.

8. "Method of Replacing Broken Facings on Crowns and Bridges,"

Dr. J. V. Conzett, Dubuque, Iowa.

There may be a few additions to the list, as all the returns are not yet in.

D. O. M. LECRON, Chairman, Section I, N. D. A.

E. P. DAMERON, Secretary, Section I, N. D. A.

The Dental Alumni Society, University of Pennsylvania.

The Twenty-seventh Annual Meeting of the Dental Alumni Society of the University of Pennsylvania will be held in Philadelphia, June 15th, 17th and 18th, 1907.

This will be an extremely interesting meeting, the number of clinics and social features being unusually large.

The Program.

Saturday, June 15th.

3 P. M.: Aquatic sports in the Gymnasium pool. Races, water-polo and fancy swimming. 4 P. M.: 'Varsity Baseball Team vs. Graduates, Franklin Field, admission free. 6 P. M.: Alumni supper, Weightman Hall Gymnasium. 7.45 P. M.: Annual business meeting, General Alumni Society, Weightman Hall. 8 P. M.: Reception to wives of Alumni, Houston



Hall and adjoining campus. 8.30 P. M.: Reunion of classes in the Dormitory Triangle and lighting of the bonfire. Special quarters for alumni of the Dental Department.

Monday, June 17th.

10 A. M.: Clinics and demonstrations, Dental Hall, both morning and afternoon. 7 P. M.: The Twenty-seventh annual banquet, Dental Alumni Society, The Bartram.

Tuesday, June 18th.

10 A. M.: Annual business meeting, Dental Hall. 2 P. M.: University grounds and buildings open for inspection.

There will be special rates on all railroads. For further information, address,

VICTOR COCHRAN, Sec'y.

1628 N. 17th Street, Philadelphia, Pa.

Virginia State Board of Dental Examiners.

The next meeting of the Virginia State Board of Dental Examiners will be held at the Medical College of Virginia, in Richmond, Va., beginning Tuesday morning, June 11th, 1907, at 9 o'clock.

R. H. WALKER, Secretary.

Norfolk, Va.

Wisconsin State Board of Dental Examiners.

The next meeting of the Wisconsin State Board of Dental Examiners for examination of candidates for license to practice dentistry in Wisconsin will be held Monday, June 10th, 1907, at the Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

Application must be made to the secretary fifteen days before examination. The candidate must be a graduate of a reputable dental college, or have been engaged in the reputable practice of dentistry for four consecutive years, or an apprentice to a reputable dentist for five years.

For further particulars apply to

J. J. WRIGHT, Secretary.

1218 Wells Building, Milwaukee, Wis.



Minnesota State Board of Dental Examiners.

The State Board of Dental Examiners of Minnesota will hold a special meeting at the Dental Building of the State University in Minneapolis on June 6, 7 and 8, 1907. All applications must be in the hands of the secretary by 10 o'clock, June 6th, as examinations will begin at 10.30 o'clock sharp. All blanks, paper and patients supplied by the board. Operating instruments, etc., must be brought by the applicant. Any further information will be given by addressing

GEO. S. TODD, Secretary.

Lake City, Minn.

Pennsylvania State Board of Dental Examiners.

The Board of Dental Examiners of Pennsylvania will conduct examinations simultaneously in Philadelphia and Pittsburg, June 12 and 15, 1907. For application papers and full particulars address

DR. NATHAN C. SCHAEFFER, Secretary Dental Council.

Harrisburg, Pa.

Rhode Island Board of Registration in Dentistry.

The Rhode Island Board of Registration in Dentistry will meet for the examination of candidates at the State House, Providence, R. I., Tuesday, Wednesday, and Thursday, July 9, 10, and 11, 1907. Application blanks and particulars may be obtained from

W. S. KENYON, Secretary.

301 Westminster St., Providence, R. I.

District of Columbia Board of Dental Examiners.

The Board of Dental Examiners of the District of Columbia will conduct their semi-annual examination July 1st, 2d and 3d.

All applications for examination must be accompanied by a fee of Ten Dollars, and should be filed with

WILLIAM B. DALY, Secretary.

1340 New York Avenue, N. W., Washington, D. C.



Florida State Dental Society.

The Florida State Dental Society will hold its twenty-fourth annual meeting in the Continental Hotel, at Atlantic Beach, Thursday, June 6, continuing in session three days. All ethical practitioners are cordially invited to attend.

C. H. FRINK, Corresponding Secretary.

Fernandina, Fla.

Missouri State Dental Association.

The next annual meeting of the Missouri State Dental Association will convene in Kansas City, Mo., June 4, 5 and 6, 1907. A most interesting and profitable meeting is anticipated. All ethical members of the profession are cordially invited to attend.

F. G. WORTHLEY, President, Kansas City, Mo.

E. P. DAMERON, Cor. Sec'y, St. Louis, Mo.

North Carolina State Board of Dental Examiners.

The next meeting of the North Carolina Board of Dental Examiners will be held at Morehead City, N. C., June 24th, 25th and 26th, 1907.

Applicants must register on or before 9 A. M., June 24th.

For further particulars, address

R. H. JONES, Secretary.

Winston-Salem, N. C.

Maine Dental Society.

The forty-second annual meeting of the Maine Dental Society will be held, beginning on the third Tuesday of July, at a place to be determined by the Executive Committee at a later time.

H. A. KELLEY, Secretary.



California Board of Dental Examiners.

At the last examination held in December by the Board of Dental Examiners of California, there were forty-seven applicants of whom twenty-four were successful and were granted licenses. The next examination will be held in Los Angeles, beginning on the second Monday in June. This will be followed by an examination in San Francisco, beginning on the third Monday in June. Officers were elected for the ensuing year as follows: President, Dr. Garrett Newkirk, Pasadena; secretary, Dr. C. A. Herrick, Jackson; and treasurer, Dr. Joseph Loran Pease, Oakland.

C. A. HERRICK,
Secretary Board of Dental Examiners.

Indiana State Board of Dental Examiners.

The next regular meeting of the Indiana State Board of Dental Examiners will be held in the Capitol at Indianapolis, June 11, 12, and 13, 1907. All applicants for examination to practice in the State should apply to the secretary for further information, blanks, etc. Applications for examination must be in the hands of the secretary at least five days before the above date.

F. R. HENSHAW, Secretary.
Middletown, Ind.

Oklahoma Board of Dental Examiners.

The Oklahoma Board of Dental Examiners will hold its next meeting at Oklahoma City, June 17, 18, 19, 1907.

Candidates will be furnished with proper blanks and such other information as is necessary upon application to the secretary.

A. C. HIXON, Secretary.
Guthrie, Okla.

